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THIS MONTH'S COVER

SOMETHING new in packs is presented by this rugged BAR man of the 4th (Regiment) marines by wrapping his blanket in a Jap straw mat instead of the usual shelter half. The artist, StSgt John W. McDermott, USMC, of Glendale, Calif., a former cartoonist with Walt Disney, in doing the drawing wanted to portray the fighting marine as he is, susceptible to all the natural instincts and emotions; not as the superman of story books nor as the lantern-jawed killer in the pulp magazine. Grim, worn out, stripped for action, carrying the maximum for fighting and the minimum for comfort. Sgt McDermott soon to be discharged is a veteran of the fighting on Tulagi, Gavutu, Guam and Okinawa. Several of his drawings were among those recently displayed at the National Art Gallery, Washington, D. C., in connection with the Corps' 170th anniversary.

THE MARINE CORPS GAZETTE

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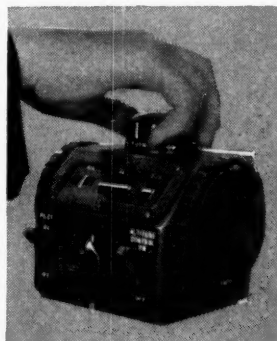
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DECEMBER 1945

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This Month and Next

TRAINING to fight and fighting are two different matters but the Sixth Division, storming a Jap stronghold at Motobu peninsula on Okinawa, learned that the so-called theory of sound tactics and terrain appreciation paid off when applied successfully. How the Sixth turned "theory" into victory is told by Maj Orville V. Bergren in his story, *School Solutions on Motobu* (see page 2).

The record run up by carrier based marine flyers is an impressive one. Flying from a carrier presented many problems very different from those facing land based units. Maj John F. McJennett tells how the carrier marines demonstrated the soundness of the formations and maneuvers which were given in combat training in his *Marines off the Carriers* (see page 7).

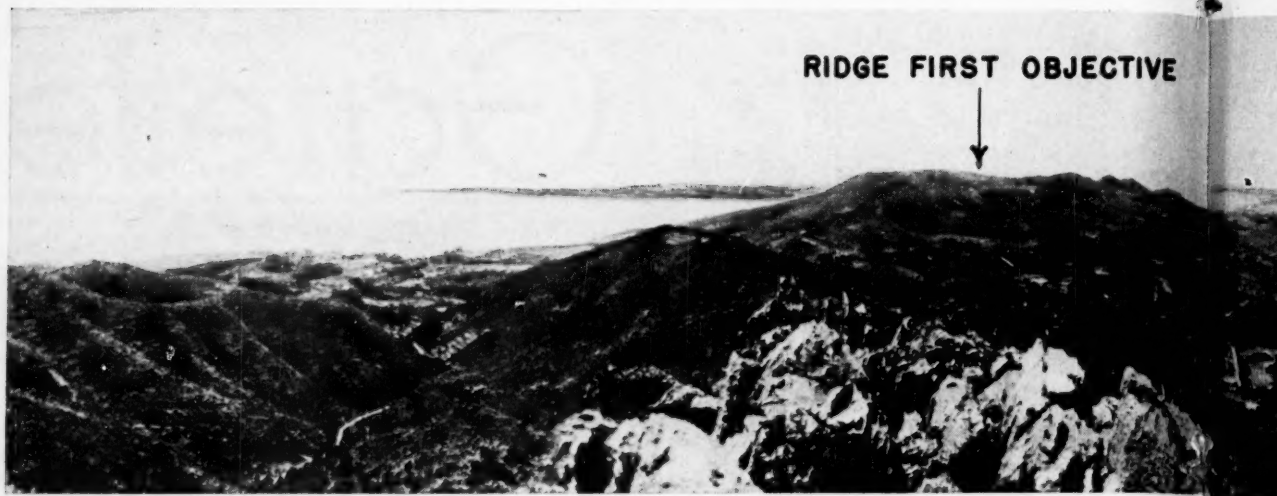
Col Samuel B. Griffith tells of the widespread devastation American bombers loosed on Tokyo and other Japanese industrial areas. In his story *Show of Force*, Col Griffith writes of what he saw on a B-29 flight over Japan during the surrender ceremonies (see page 11).

Many marines were given opportunities to carry

out unusual missions during the war. Among them was Capt William F. Grell who tells of his experiences in *A Marine with OSS* (see page 14). The captain gives the lowdown on Allied cooperation with the Maquis, the fighting members of the French underground.

Because neither in part nor in whole has any estimate of the overall effect of the employment of aircraft in the European war been widely disseminated to marines, the GAZETTE will present in its January issue a digest of the descriptive analysis of the technique, development and effect of strategic and tactical bombing against Nazi Germany as contained in two special issues of IMPACT, magazine of the Army Air Force. In an attempt to make the digest as factual and well-rounded as possible, pertinent information from the U. S. Strategic Bombing Survey committee report has been included.

With the January issue also comes the second installment of Col W. F. Coleman's article, *Amphibious Recon Patrols* on the heretofore untold activities of the pre-invasion patrols (see page 22).



RIDGE FIRST OBJECTIVE

School Solutions on Motobu

By Maj Orville V. Bergren

IN the rugged mountains of Motobu Peninsula on western Okinawa, Col Alan Shapley's 4th Marines of the Sixth Division successively employed a series of "school solutions" in cracking a reinforced enemy battalion strongpoint in a unique four-day battle 14-17 April 1945. Besides demonstrating the fighting qualities and physical endurance of the front-line marine, the tough up-hill battle furnished several fine examples of successful application of sound tactics and terrain appreciation.

After landing against a bewildering lack of organized resistance on 1 April and capturing the big Yontan airfield standing up, the 4th Marines had worked up the east coast of long, rugged Okinawa 20 miles, meeting strong enemy resistance at only one point. The 22d Marines had moved up the west coast, and the 29th Marines were in division reserve until the front lines reached the neck of Motobu Peninsula, a rugged piece of rock jutting out of western Okinawa approximately seven miles long and five miles wide (map distance), with heavily wooded peaks reaching as much as 1,500 feet in the air.

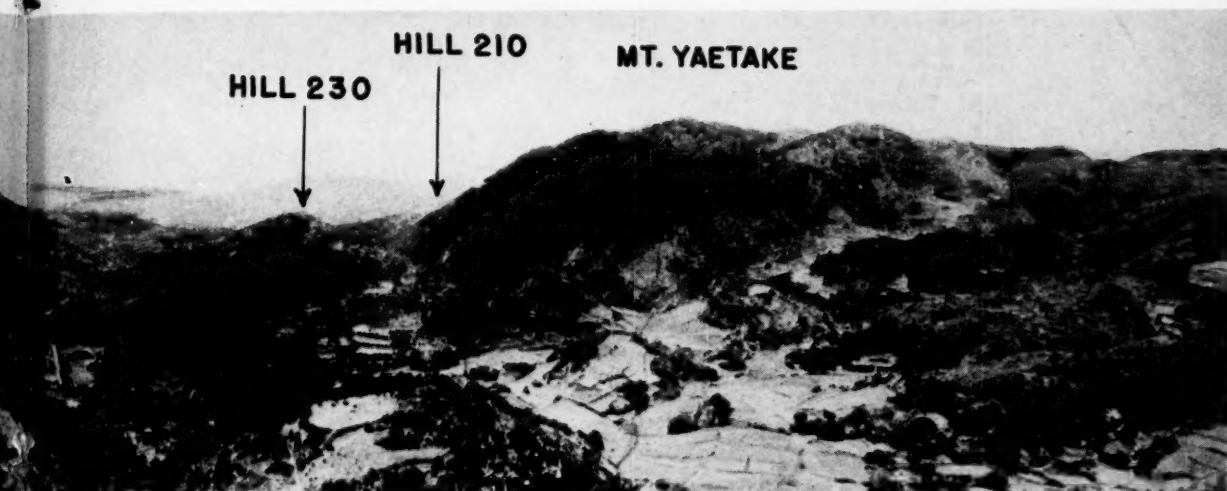
The 29th Marines had been given the assignment of reducing enemy resistance on the peninsula. Working up the roads and patrolling the trails, the 29th soon had its three battalions situated miles apart, each patrolling its area trying to seek out the bulk of the estimated 1,500 Japs garrisoning Motobu. The 3d Bn, 29th, suddenly discovered the enemy, to the tune of having a company patrol ambushed, cut off and badly shot up before extricating itself.

It was obvious they needed help and that something stronger than patrol action was in order, so

the 4th Marines, having run into nothing but a few enemy stragglers on the east coast, were ordered to assemble on the west coast the following day. By nightfall of that day, 13 April, the 2d Bn, 4th, was assembled on the southwestern tip of Motobu Peninsula, having hiked 18 miles over the mountains to get there. The 1st Bn, 4th, was assembled near Awa, a village on the south coast of the peninsula about three miles from the 2d Bn, and the 3d Bn was some 30 miles away completing a patrolling mission on the northwest coast of Okinawa, temporarily unavailable for use by the 4th.

With the 3d Bn, 29th, attached, the 4th Marines were ordered to seize a 700-foot-high ridge the following morning, 14 April. This ridge was about 1,200 yards inland from the coast and dominated the western coast and coastal road. Intermittent machine gun fire had been received from it, and right behind it was where the ill-fated company of 3/29 had been chopped up. The situation was unique in that the direction of attack was east, toward the mainland and almost directly toward our own artillery! To make matters a little more unique, we were driving toward the remaining two battalions of the 29th, who were working toward us from the central part of the peninsula about four miles away, thus making careful coordination of artillery, naval gunfire and air support a strict necessity.

The attack to seize the ridge jumped off at 0830 14 April with 3/29 on the left and 2/4 on the right. Surprisingly, this ridge was taken against light opposition. Scattered mortar and light artillery fire harassed the troops but did not prevent the taking of the ridge by 1115. Meanwhile, 1/4 had been ordered up to an assembly area to the right rear of 2/4 front lines to protect the right flank. The left flank was anchored to an almost sheer slope.



A panoramic view of the Okinawan terrain where "school solutions" helped the Sixth Marine Division crack a reinforced enemy stronghold in a unique four-day battle.

Charlie Company was ordered up to seize dominating high ground about 1,000 yards to the right front of the 2/4 front lines and to contact 2/4 at that point. (See Map 1.)

The attack was resumed at 1200 and resistance sharply increased as the troops headed into the low ground on their way to the next ridge, which was their next objective. The terrain was ideally suited to defense, and the Nips made the most of it. Initially their defense consisted of small, concealed groups, each group usually built around a heavy Hotchkiss machine gun augmented by several Nambus. As one marine well put it, "Jeez, they're all carrying Nambus, but where are they?"

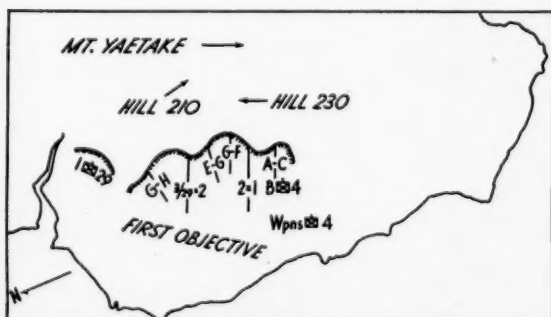
From a concealed position, the Japs would zero in on a portion of a trail probably 200 yards across a draw and let a large number of marines pass before blasting our troops at a choice time. Then they would cease firing and the marines would shoot up the area from whence the firing had come. After slowly working their way over to the spot, the marines found no Japs, dead or otherwise. Sometimes there was blood on the ground or in the emplacement from which they had fired. Sometimes there was nothing.

There was much evidence that the Japs were pull-

ing their old trick of hiding their dead in the rocky and heavily vegetated terrain. It was like fighting a phantom enemy. An entire platoon passed over one portion of a trail uneventfully. When the company commander came along with his headquarters section, a machine gun suddenly opened up, killing him and several others. A battalion commander was standing in his OP with his Bn-3 on one side of him and his Bn-2 on the other. There had been no shooting for over half an hour in that vicinity. Suddenly, from the side of the next ridge a Hotchkiss fired one burst. The CO fell dead with three bullets in his heart. No one else was hit. The marines were itching for a fight, but found nothing tangible. The percentage of officer casualties was unusually high.

When the attack ceased at 1630, 3/29 and 2/4 were digging in on the regimental objective. Charlie Company of the 1st Bn was on the high ground on the right flank. The remainder of the 1st Bn had been committed earlier in the day to protect the right flank. Contact was established all along the line and there now were three Bns on the line, 3/29, 2/4 and 1/4 from left to right. Meanwhile, 3/4 had been ordered to a point three miles away on southern Motobu as division reserve. The regimental weapons company, unable to use its heavy weapons because of the terrain, was organized as an infantry company and used to protect the widening left flank. The weapons company was a "double threat" outfit, its nucleus having once been part of the 2d Raider Battalion, from which the company was formed when the raider battalions were disbanded and organized as the 4th Regiment. Consequently they were not new to the ways of infantry and the transition was easy. (See Map 2.)

At this point it might be well to mention one of the outstanding features of the engagement: that of supply and evacuation. The engineers were working feverishly trying to improve the far from ade-



Map 1: The first phase of the Motobu fight.

quate road net and to push new roads up to the front lines. But, although they did a beautiful job, the rugged country prevented them from catching the infantry. Consequently, ammunition, water and chow went the last 1,500 yards from the forward dump to the front line troops on the back of sweating marines. The division sent up as many men from the replacement draft as could be spared for the job. Battalion headquarters companies and support platoons were used. It was a back-breaking, discouraging job but there was no other way.

Conversely, the evacuation of wounded men was just as difficult, if not more so. But if there is one thing marines will go through hell for, it is the well-being of their wounded. The job of evacuating seriously wounded men from the crests of 600-foot hills with steep, rocky, wooded slopes was miraculously accomplished in record time. Many lives were saved because of other marines' will to save them.

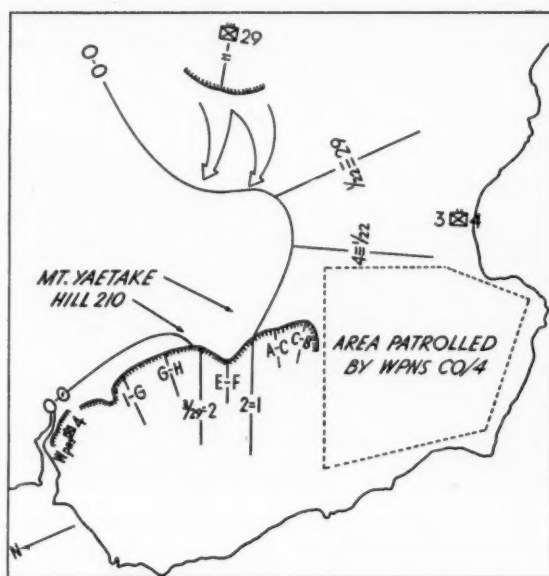
THE next day, 15 April, the regiment resumed the attack to seize the next objective, the O-N line, which was merely an enlargement of the existing "beachhead" and involved a push to the next "ridge" of high points 1,000 yards to the front. The attack was with three battalions abreast, in the same formation in which they had ceased the attack the previous evening. The defense still consisted of scattered small groups firing from well-concealed positions. (See Map 2.)

By noon the regiment was halfway to its objective. Casualties were mounting steadily. The 2d Bn, 4th, again had tough going, as did the 1st Bn in its attempt to capture a high peak dominating the entire right flank. George Company of 2/4 had 65 casualties during the day, including three company commanders.

The advance of 3/29 on the left had been held up by an enemy strongpoint on and in Hill 210, which was 500 yards to its right front, containing well dug-in machine guns, mortars and one 77mm mountain gun which the Japs dragged out of an L-shaped cave at intervals to fire a few harassing rounds every time they had a chance. For two days naval gunfire, artillery and air strikes using 500 lb bombs and napalm flame bombs had been working over the hill, and every time it was thought reduced, the persistent Japs would pop out of their caves, drag out their mountain gun and crank off a few rounds, sometimes with devastating effect. In one case they fired three rounds into the 2d Bn CP, with a result of 19 casualties.

When the attack was ordered to cease at 1630 the two right Bns were on their objective and 3/29 was organizing favorable ground slightly short of them. The troops were very tired and the supply situation was more difficult than ever.

It was obvious by this time that the regiment was attacking a force of at least two companies, which were utilizing the difficult terrain to the best

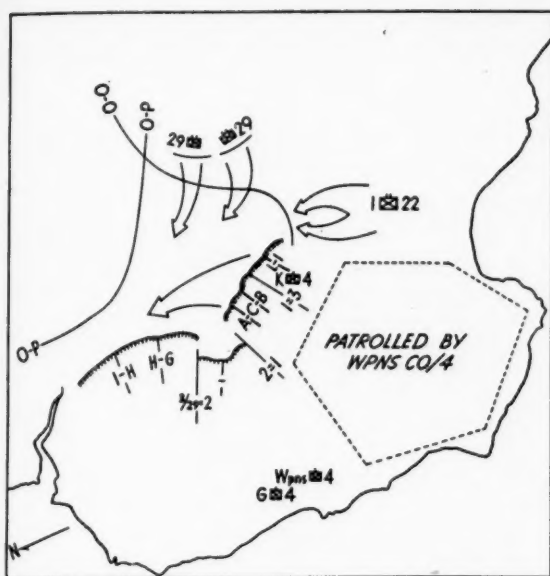


Map 2: The Japs' line was horseshoe-shaped.

possible advantage. It was also apparent that the direction of attack was the anticipated direction on which the Japs had built their defense. These factors, plus the fact that the advance was still toward our artillery and friendly troops, made it obvious that the direction of the attack should be changed. Consequently, it was decided to contain and envelop the enemy strongpoint by flanking action from the right, changing the direction of attack from east to north.

The 3d Bn, 4th, reverted to regimental control at 0600 the following morning, 16 April, making the 4th temporarily a four-battalion-regiment. Division order called for the seizure of objective line O-O, which was a horseshoe-shaped line involving juncture of the 4th and 29th Marines and the 1st Bn, 22d, which had previously been ordered into position with the assignment of working toward the O-O line by thorough patrolling and contacting the 4th on the left and the 29th on the right. This would make a continuous line for a push from the south, the closed end of the horseshoe. (See Map 2.)

Consequently, the 4th's operations order called for the following: 3/29, on the left, to seize the high ground 500 yards to its front, including the strongpoint on Hill 210 previously mentioned; 2/4 to remain in its position on its commanding ground and support the attack of 3/29 and 1/4 by fire; 1/4 to swing its right flank forward to tie in with 3/4 when it got into position; 3/4 to move from its assembly area at 0700 by the most direct route to its place on the O-O line to establish contact with 1/4 on the left and protect the regimental right flank until 1/22 came abreast; and Wpns Co/4, organized as an infantry company, to thoroughly patrol the area to the right of the regimental zone of action around the point of the peninsula to the zone which 1/22 was patrolling. (See Map 2.)



Map 3: The final phase of the Motobu fight.

The attack was resumed at 0900. The big stumbling block to 3/29 reaching the 0-0 line was the stubborn strongpoint on Hill 210 to its right front. The method of reducing it was as pretty as any solution that ever came out of Fort Benning. How Company, on the right, was faced by a frontal attack down into the low ground and then up the rather steep side of Hill 210 into the teeth of the enemy fire. Consequently, George Company, on How's left, was ordered to break contact with Item Company on its left and seize the hill by flanking action from the south, while How Company was ordered to support the attack by fire, at the same time moving its support platoon to the left to fill in the gap left by George. It was also arranged with 2/4, on the right, to support the attack by fire from Hill 230.

The plan was a logical one, fitted perfectly to the terrain and situation. It was well executed, with the supporting fire keeping the Japs down until George Company had captured the top of the hill and was swarming down over the forward face of it like a bunch of bees on a honeycomb. The marines had a field day, blasting caves with grenades and demolitions and shooting up the demoralized Japs, several of whom blew themselves up with their own grenades. Other disorganized remnants retreated on the double and were picked off like ducks on a pond by the rampaging marines on the hill and others of the 2d Bn who were supporting the attack by fire from their lofty positions on the right. The position was ours, 147 Japs were dead, the mountain gun was silenced. The positions of George and How Companies in the line had been inverted, George now being on the right. The time was 1200.

By this time the 3d Bn, 4th, was in position on the 0-0 line and in contact with the right flank of the 1st Bn's line, which had swung well forward on the right. Consequently, 1/4 and 3/4 were facing north, a right angle from the lines of 3/29 and 2/4, which were solidly entrenched on high ground facing east. The attack was resumed at 1230 with 3/29 and 2/4 ordered to remain where they were and support the advance by fire when possible, and 1/4 and 3/4 advancing straight north to seize the next objective, towering 1,200-foot, three-crested Mt. Yaetake, which dominated all terrain in the area. 1/22, on the right, was far behind, and the 29th was not yet on the 0-0 line, so the regimental right flank was in the air. It was a gamble, but the pocket of enemy resistance had been quite clearly defined by contact and also by questioning of several Okinawans.

Mt. Yaetake was a back-breaker, and lay in the 1st Bn's zone of action. Able Company was on the left, attacking frontally up one nose, and Charlie Company was on the right, working up a draw on the right flank for flanking action. The uphill advance was slow but against only light, scattered machine gun fire. Suddenly the 2d Bn, from its vantage points on Hill 230, radioed the 1st Bn that Japs were moving toward and up the north slope of the hill. The 1st Bn immediately opened fire with everything it had, including plenty of mortars, and many Japs bit the dust. But there was much concealment and cover in the vegetation and the range was long. Consequently, many of them got to the top to join others who were there waiting for the marines to come within good range.

JUST as Able Company hit the crest the Japs suddenly opened up. The fighting was very close and ferocious. The marines pulled back and employed their 60mm mortars. The Japs were using plenty of knee mortars and hand grenades. Nips and marines were tossing grenades back and forth over the crest of the hill like baseballs. The crest of the ridge was not tenable to either side. A lieutenant in Charlie Company, already bleeding from grenade fragments, shouted to his platoon, "Let's get aboard that . . .!" The marines responded with a blood and thunder charge that compared favorably with old Western movie thrillers. With every man shooting, throwing grenades and screaming like a Comanche Indian, with the beloved BARs roaring, the marines reached the crest of the hill for the second time, and this time they stayed. They were quickly joined by another platoon and before ten minutes had elapsed the two companies were masters of Mt. Yaetake.

The Japs then started throwing lots of heavy mortar shells, augmented by knee mortars. The marines of Able and Charlie companies were in a bad way. Although they had gained the top of the hill and didn't mean to lose it again, they had taken

over 50 casualties getting there and were now practically out of every kind of ammunition. To make matters worse, the Japs were apparently gathering their remaining strength for a counter-attack. Our artillery was very effective. The 2d Bn was still firing at and killing many Japs on the reverse side of Yaetake. Its 81mm mortar platoon fired over 350 rounds in two hours.

This mighty combined firepower kept the Japs down until ammunition could be rushed up to the two companies on the hill. If the supply problem was difficult before, it was a killer now. That 1,200-foot hill looked like Pike's Peak to the tired, sweaty men who started packing up ammunition and water on their backs.

Practically everyone in the 1st Bn headquarters company grabbed as much ammunition as he could carry. A man would walk by carrying a five-gallon water can on his shoulder and the battalion commander would throw a couple of bandoleers of ammunition over the other! A flash-ranging outfit had been assigned temporarily to the 1st Bn. One of the NCOs griped at the idea of packing a heavy load up that hill, saying, "But I'm a staff sergeant." The chap next to him, picking up two boxes of machine gun ammo, stopped him in his tracks with, "I'm a first lieutenant. Let's go!" The battalion commander, on his way up to the front lines to get a closer look at the situation, packed a water can on his way up. Stretchers also had to be carried up, and all hands coming down the hill were employed as stretcher bearers.

The ammunition, plenty of it, was quickly in the hands of the hill's defenders, just in time to stop a characteristic banzai charge by the fanatical Japs, who were taking a pasting from our mortars and artillery and wanted very much to retake the hill. The marines were ready for them and the remaining Jap defenders of the hill were wiped out.

And so the two Jap strongpoints had been taken, both by flanking action, with the very effective help of strong supporting fire on the reverse slopes of the hills. A total of 347 Japs had been killed.

THE regiment dug in for the night on the commanding ground which it now held all along the line. The 29th Marines were approaching from the east, but no contact had been established with them or with the 1st Bn, 22d.

Due to the critical supply situation, the attack could not be resumed until 1200 the next day, 17 April. The 4th Marines were ordered to seize objective line O-P along the east-west Toguchi-Itomi road. The left flank of the regiment was on the road, but the lines ran perpendicular to it for 2,000 yards, and then parallel to it, since the line formed by 1/4 and 3/4 on the right was at right angles to the line formed by 3/29 and 2/4 on the left. In other words, the left two battalions were ordered to

defend their lines facing east and support the attack by fire, and the right two battalions were ordered to resume the attack to the north to seize the O-P line. Consequently, their left boundary was the front line formed by the left two battalions. It was a beautiful opportunity to support the attack by fire. (See Map 3.)

Well-fed, watered and rested, 1/4 and 3/4 jumped off at noon, and the going was downhill all the way. The right elements were ordered to set off two white phosphorous grenades every hour on the hour to guide the 29th Marines toward making contact with us. The 1st Bn, 22d, was now pinched out of the picture.

ONLY light, scattered resistance met the rapidly advancing marines. On the sides and at the foot of Mt. Yaetake they overran elaborate caves, communication systems, bivouac areas, Jap materiel of all kinds. Dead Japs littered the area, victims of artillery and mortar fire, and of the murderous supporting fires of the 2d Bn the previous day. Two 15cm naval guns were discovered in giant caves, with numerous caves around them piled high with ammunition. Two tremendous prime movers were found; quantities of medical supplies were discovered. It was a souvenir hunter's paradise.

Our earlier suspicions that we had broken the back of the Jap defenses were confirmed. The remaining disorganized Japs were fleeing east and north or hiding in caves. High ground overlooking the O-P line was taken at 1645. The 29th Marines were on the right. The lines had to be withdrawn to the next ridge to the rear so that supply could be by road. The roads were mined and numerous anti-tank ditches in the road had to be repaired. These conditions were speedily taken care of, and the supplies went forward.

The Battle of Motobu Peninsula was history. A counted total of 541 Nips had been killed. Several enemy maps captured the last day showed all the Jap defenses in the area, and our estimates of Jap positions had been correct. They had all been concentrated in the pocket which previous intelligence estimates had predicted, a fine piece of work by the 2-section. The remainder of the scattered elements of Jap resistance were reduced by patrolling.

Obstacles that had been overcome were: a strong enemy defense, which had made the most of the very rugged terrain; the difficulty of supply, evacuation and communication on the inadequate road net; the difficulty of using close artillery support, and the impossibility of using tanks, M-7 105mm SP howitzers and the 37mm guns. LVT(A)s mounting 75mm howitzers were used effectively, and the successful use and coordination of naval gunfire support and illumination, air support and air observation added materially to the success of the engagement.

Marines off the Carriers

Their record demonstrated the sound basis of marine aviation doctrine and was impressive in the face of numerous handicaps.

By Maj John F. McJennett



THE target was Kagi strip in central Formosa. On the morning of 3 January, the carrier *Essex* turned into the wind. The first TBM lumbered noisily down the flight deck and lifted into the air. One after another the bombers took off.

The fighters thundered after—not the stubby F6F Hellcats, but sleek, gull-winged F4U Corsairs flown by fighter pilots from Marine Fighter Squadrons 124 and 213—the first carrier-borne marines to take off from a flight deck on a combat mission against the Japs.

VMF 213 and 124 were the first of ten marine squadrons to operate with the fast carrier task force. Others followed shortly after. VMF 112 and 123 boarded the *Bennington* in late December, 221 and 451 the *Bunker Hill* in January, 216 and 217 the *Wasp* in February and later 214 and 452 the ill-fated *Franklin*. The record of these squadrons demonstrated the soundness of marine aviation doctrine which specified close support and carrier replacement as the primary and secondary mission of marine pilots.

After the early January strikes against the stronghold of Formosa, the marines aboard the *Bunker Hill*, the *Wasp* and the *Bennington* joined in the first carrier strikes against the heart of the Japanese Empire—the now famous 16 February attacks

“... New to carrier life and operations, they had no difficulty in carrying their full share of the load... their performance about the ship and the rapidity with which they adapted themselves to carrier operations is deserving of the highest praise. By the end of the cruise they had proved themselves fully capable of performing any and all duties of carrier pilots and doing it well.” Comdr F. J. Brush, USN, commander of CAG 81 aboard the *Wasp*.

* * * * *

“... the Marines gave a most satisfactory performance.” Capt O. A. Weller, USN, commanding officer of the *Wasp*.

on Tokyo. They then swung south for the preparational and beachhead strikes in support of the landings on Iwo Jima and Okinawa—with interim visits to various spots of tactical importance from Kyushu to French Indo-China—and then played a return engagement over the Japanese mainland.

The record of their accomplishments includes



More than 1,000 carrier-based planes of Task Force 38 stage an aerial show near Japan as the powerful force awaits orders to move into enemy ports after surrender.

226 confirmed kills of airborne enemy planes and 219 destroyed on the ground. They are officially credited with sinking a destroyer, seven cargo ships, one barge, one midget submarine and 148 smaller craft such as picket boats, luggers, landing craft, sampans and fishing boats. Listed as probably sunk are five more freighters.

They put out of action with damaging hits a light cruiser, three destroyers, four destroyer escorts, 26 freighters and 64 smaller craft on which the Japs were leaning to keep the supplies that were the lifeblood of the empire flowing. This score against surface craft was made with the light armament of the fighter plane. On only a fraction of their flights did the marine Corsairs load rockets or bombs.

Marine losses, exclusive of those aboard the *Franklin*, were comparatively light. The *Essex* marines had combat losses of seven planes and two pilots, and those aboard the *Wasp* four planes and three pilots. The *Bennington* and the *Bunker Hill* paid a stiffer price as a result of the kamikaze hits they sustained.

The record run up by these carrier-based marine flyers is the more impressive in the light of the handicaps under which they operated. Flying from a carrier presents problems very different from

those that face a land-based unit. There is far more than a normal amount of instrument and bad weather flying involved. Landing and take-off techniques vary both at night and in daylight. There is greater emphasis on navigation.

VMF 112 and 123 were reasonably typical of the squadrons which took over the carrier duty. Before coming aboard, no pilot had made more than 15 carrier landings and 27 out of the 54 reporting had made only eight. None had made any night landings. Their training in instrument and weather flying was no more than that usually given to a land-based unit.

These squadrons were called on to fill in a gap—an emergency of sorts. Several developments of the air war in the Pacific had made it apparent to the Naval Command that certain phases of the fighting were beyond the capacities of the Hellcat. Steps had already been taken in anticipation of such a development to bring F4Us aboard, but only a few navy squadrons so equipped were ready. The Marine Corps had a number of experienced Corsair squadrons whose pilots had hundreds of combat hours in the plane in their log books. The answer was as obvious as time was short. The fliers were given a streamlined course in carrier routine, bounce drill, and then went aboard.



Details of the flights by ten marine squadrons over a period of six months during the final air offensive against Japan cannot be fitted into a single article. They amount to a tactical Cook's tour of the remnants of the Japanese empire and operationally ran the gamut from the housekeeping duties of the fighters in CAP through close support of ground troops and special interceptor patrols to the familiar and often flown mission against "enemy aircraft over the target" and/or the well known "ships and strips."

Enumeration of the main strikes will give an idea of the extent and variety of their operations. Three days after the 3 January attack against the Kagi strip in central Formosa, the marines hit the Aparri and Camalanuigan strips in northern Luzon. Several days later they were back over south central Formosa after "ships and strips." Then they jumped to French Indo-China with a primary target of the three strips adjoining the then vital base at Saigon. Hainan and Takao Harbor were next. Then they moved up to Ie Shima and swung back to work over the Formosa strips again.

The pattern of these strikes almost explains their purpose. They aimed at pinning down Jap aviation for the Linguayan landings. The inability of the Jap air force to interdict the landings or stop subsequent supply convoys indicates a good measure of their success.

Next on the list came strategic support for the

assault on Iwo Jima—neutralization of the airfields of the home islands. The 16th of February found the *Bennington*, the *Bunker Hill*, the *Essex* and the *Wasp*—with the rest of the fast carrier task force—standing off Japan and launching against Tokyo in the first surprise raid that caught Tojo with his planes down. The imperial city got another treatment the following day, then the fast carriers pulled out for the south to throw their weight directly into the fight for Iwo. En route the *Wasp* stopped off long enough for naval and marine flyers to pay a punishing visit to the Susaki strip on Chichi Jima.

On 19 February the marines took off for tactical attacks against Iwo targets and in the next couple of days worked for the first time in close support of marine infantry. Several days later, Chichi again played host, and on 25 February it was Tokyo's turn again. Then back once more to Iwo.

Mid-March saw the fast carriers striking Kyushu targets and then moving down the Ryukyus in aerial preparation for the Okinawa landings. L day at Okinawa arrived and the marine flyers, along with their navy shipmates, provided tactical support for the landing. On 3 April, several squadrons took part in strikes against the airfields and installations at Saki Shima. Then two days later the Tokino Shima strip got a working over with napalm, rockets and strafing.

The 7 April docket was a shipping sweep, and two days later came a swing against suicide air-

craft awaiting take-off. After a spectacular day on interceptor patrol, the 13th and 14th were devoted to Kikai and Taenga Shima airfields, and then Tokuno Shima, Kikai, and Minami Daito Shima on Kyushu were hit.

In late April and through May the routine narrowed in scope. The primary mission of Task Force 38 was support of the reduction of Okinawa and to wipe out, "as practicable," enemy air in Southern Japan. In addition, the force was charged with the continued surveillance and neutralization of the Amami Gunto, Minami Daito and Okino Daito.

June saw the marines doing some aerial house-keeping at Okinawa—the beach CAP and like duties. There were sweeps up the island chain to and including Southern Kyushu. They flew the interdiction and barrier combat air patrol and took part in the turkey shoot of the kamikazes coming down in droves after the fat bait of American shipping in the water around Okinawa. They ran fighter strikes on Kanoya and Minami and Okino Daito. There was plenty to keep them busy until the strips ashore were far enough developed to support tactical operations of a size sufficient to handle the island defense and to mount an aerial offensive against the home islands.

For the statistically minded, marine pilots flew a total of slightly more than 5,000 combat sorties—in excess of 20,000 combat hours. Workhorses of the group were the fliers aboard the *Bennington*, who accounted for nearly half of the total. All but 360 odd sorties of the remainder were logged by the squadrons on the *Essex* (1,041 sorties for 3,635 hours) and the *Bunker Hill* (incomplete records credit 1,000 sorties for 4,193 hours). VMF 216 and 217 on the *Wasp* flew 316 sorties for 1,602 hours and the unfortunate *Franklin*, in her day and a half of warfare, put off 48 planes.

Of the more notable strikes in which the marines participated in their six months of carrier duty, the first attacks on Tokyo in mid-February just about top the list. The mission, initially, of both marine and navy flights, was to knock out airborne opposition, then to go after aircraft revetted around the fields and work over field installations.

The 16th fell considerably short of an ideal day for air operations. Fliers consider weather conditions in the neighborhood of the home islands about as bad as anywhere in the Pacific, with the possible exception of the Aleutians. The day scheduled for the first attacks proved their point. Rain and sleet lowered the ceiling to less than 200 feet in some areas, and nowhere was it higher than 2,000. At 25,000 feet, the temperature was 55 degrees below zero. The weather over the target was about as bad as it was around the fleet.

However, things started auspiciously. A four-plane combat air patrol from VMF 112 drew first blood at 0800 when they jumped and splashed a Betty which was headed for the carriers. The

strike flights got off without incident and pushed through rotten weather, hoping for a break over the target—which was not to be. They arrived over Honshu at 25,000 feet and began to lose altitude slowly, looking for trouble. There were no Jap planes airborne. It was something of an anticlimax. A puzzled, and somewhat disappointed, flight of marines continued on down to the deck and raked the O Shima strip and neighboring installations with their fifties. At Mobara and Katori, and elsewhere, the sweep missions had the same experience. No aerial opposition. Yet intelligence had reason to believe that in and around Tokyo the Japs had concentrated 600 first-line fighters. If they wouldn't defend Tokyo, what would they defend?

Subsequent analysis of why the Japs failed to get their fighters off the deck on this first day could offer the single conclusion that the Japs were taken completely by surprise, that the weather had permitted the carrier planes to get to their targets and strike before the Japs could get up to meet them.

THE strikes scored heavily. But if the weather had hindered airborne defense, it helped the Jap AA gunners. Low-hanging clouds compelled shallow dives and gave the gunners a ceiling against which to check their bursts. The ground fires were rugged but ineffective. Marine pilots were credited with nine grounded aircraft destroyed and 17 damaged, plus numerous hits on installations at O Shima, Mobara and Katori. Two airborne Zekes were shot down and eight planes damaged on the ground on the fighter sweep against Hamamatzu and Mikatagahara. On the way home, this flight burned a 4,000-ton tanker near Nii Shima. The group attacking the Konoike airfield got one kill and one probable and two damaged out of four airborne and bashful Tojos and wrecked ten Bettys on the ground. They then moved over to Hokoda, where they flamed three hangars. A return visit, late in the afternoon while flying escort on a hop against Hamamatzu and Mikatagahara, netted the marines nine grounded twin-engined planes of the baka-carrying type. On the way back to the carrier they spotted a destroyer escort and a picket boat. The destroyer escort was left smoking and the picket boat was probably destroyed.

The absence of fighter opposition caused the brass to step up the schedule. The first day which was to have been exclusively devoted to fighter sweeps was reordered to include bombing strikes in the afternoon. In these the chief role of the marines was one of escort.

The second day was one of mixed sweeps, fighter-bomber attacks, and bomber-escort missions. The fleet weather was just as bad as the previous day, but as the fliers neared the coast it lightened, and over the target was CAVU—ceiling and visibility

(Continued on page 56)

Show of Force

By Col Samuel B. Griffith

AT half past nine we broke out of the front and at ten were over Choshi Point, about 60 miles east of Tokyo. There were B-29s all over the sky, at every altitude, and all of them seemed to be converging over the little Japanese fishing village about 4,000 feet below us.

This was the show of force put on over the Tokyo-Yokohama area during the surrender ceremonies aboard the USS *Missouri* in Tokyo Bay. A friend on the staff of the 20th Air Force had promised to crowd me aboard one of the B-29s, provided I could get a letter from my Division commander requesting that I be taken on an indoctrination flight. The letter was easily arranged. General Erskine said he thought it proper that the 3rdMarDiv be represented at the surrender ceremony—even if in an indirect and remote way. I complied with pre-flight instructions — even to GI shoes which would not be ripped off by deceleration when the chute cracked on a jump. There was a delay in takeoff time—foul weather—and we finally got off at 0251.

On the way north the soup was still pretty thick. I read some and had a nap. Three hundred miles south of Tokyo—when I woke—I could barely see

beyond the tips of the wings. The two waist gunners and the man in the top blister were very alert. There were about 600 other B-29s, all headed for the same general area, which spelled a very crowded sky and practically no visibility. I decided that this was one of those things there was no use worrying about.

As we circled over the fishing village, the formations took shape, first the squadron, then groups and wings. We passed over a town that had been completely burned out. That is, there wasn't anything left of it. Nothing at all. From the size of the burned area I judged it to have been a town of about 25,000. I found out later that the name of the place was Mito. It had been a target for incendiary attack by one squadron.

Suddenly below us the panorama of a ruined Tokyo began to unroll. Hundreds of blocks had been burned to the ground, and grass was beginning to grow where wooden houses once had stood. The streets were almost deserted. Here and there we saw a street car, an occasional motor car, a few bicycles, some pedestrians. Aside from isolated islands of houses and trees that had by some miracle escaped the sea of fire, there were left standing only



Only stone and steel buildings stood in downtown Tokyo after scouring by fire bombs.

the ferro-concrete structures. These were desolate, with blackened window frames gaping empty, testifying to the fury of the fire that burned them out. Towards Yokohama we passed over factories, oil storage tanks, railroad yards. All of them showed the results of the poundings they had received. They were deserted, ruined.

THE fleet in Tokyo Bay was a majestic spectacle of sea power. Carriers, battleships, cruisers, destroyers, hospital ships, transports, cargo vessels, tankers, dock and repair ships, escort carriers; and still all of them not able to get in, for looking towards the sea, we could see other ships in Sagami Wan. At Yokosuka Naval Base there appeared to be about six Japanese destroyers moored. They looked rather the worse for wear, and there were canvas covers over their smoke pipes.

We swung towards the northeast, passed over Chiba and circled Tokyo again. This time we saw the palace and grounds quite clearly. We could see men working about the shrubbery. Meiji Shrine Stadium looked dilapidated; its playing fields were planted in vegetables.

As we passed over Yokosuka for the second time, our squadron leader made two dips, and then planes that had been flying in formation with us fell out. "Strato-Wolf 2d," on our right, dropped back and lost altitude. We turned west, towards Nagoya, and

I crawled through the tunnel to get up front where I could get a better view.

The Japanese countryside seen from the air has none of the grandeur of our own—but it has a beauty peculiar to itself. I had been in Japan briefly in 1935 and again for a few days in 1938, but I had forgotten the definite charm of the rural countryside. So many hundreds of small fields and paddies, miniatures. One field in a California truck farm would swallow scores of these tiny, carefully tended holdings. And nowhere a barren spot, nowhere a field that did not reflect the assiduous attention of a farmer and his family.

We crossed Suruga Wan and flew over Shizuoka. Perhaps one-third of the city remained, the rest was ashes. There were fishing boats in the bay and the fishermen paused to look up as we went over.

"I wonder what they're thinking as they look at us?" I said.

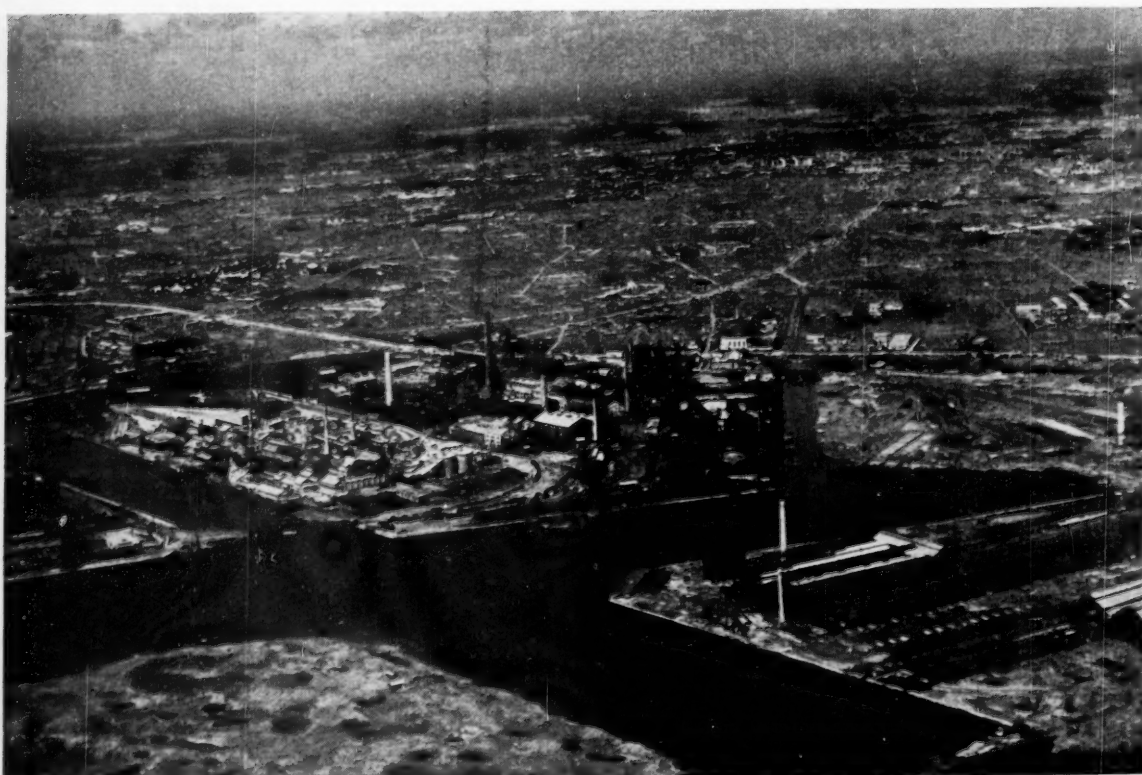
The major in the co-pilot's seat looked out. "The bastards."

"We ought to come back up here and burn the rest of that goddam city," Maj Gary said. "We seem to have missed some of it."

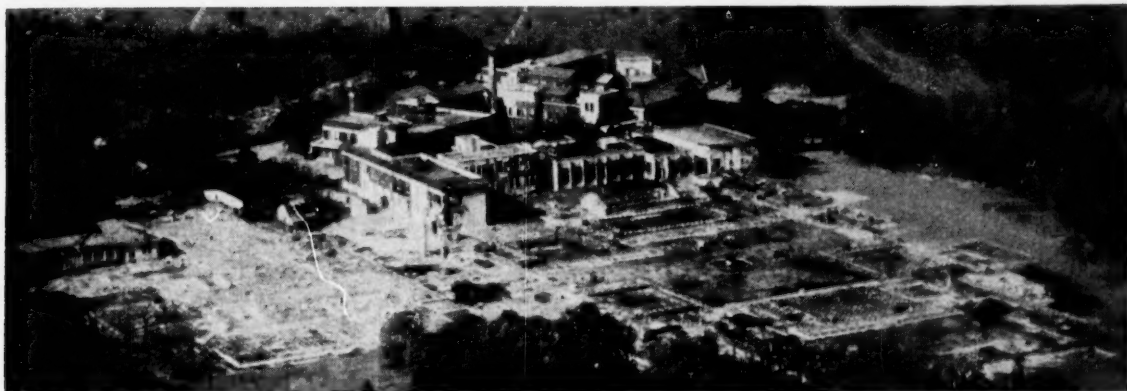
The colonel in the bombardier's seat was taking pictures.

"Go down a little lower, Gary, and circle it again. I want to get that factory."

We made what I would call a gliding approach



Except for a few waterfront structures, Tokyo's industrial area was laid to waste.



Hirohito's imperial palace in Tokyo plainly shows the handiwork of U. S. air might.

and the colonel photographed what was left of the factory.

"Fuji San is over there," the major said, pointing towards the north. We couldn't see it. "Socked in" he added.

"Well, let's go, we'll never get to Nagoya at this rate," Gary said. "Have you got all the pictures you want of this place?"

We made a climbing turn and headed west again across the foothills that rise so abruptly from the sea. The hillsides were heavily wooded. Where cuttings had been made, reforestation was evident, with the new trees in various stages of growth.

"They don't have much but they sure take care of what they have. They make the most out of the least," Gary said.

AS WE flew along we spotted airfields here and there and went over low to look at them. Hangars were ripped apart by bombings and planes in re-tirements were smashed, twisted into piles of junk, and burned. Fields were pitted here and there with craters, but, because the fields don't ordinarily have surfaced runways, this damage was superficial. There was nothing superficial about what had happened to the hangars and the planes.

"The carriers attended to these boys," the colonel said. "Did a good job, too."

At one field there were about 50 single-engined fighters lined up in front of the partially destroyed hangars. Their props were off and there were canvas covers over the radial engines. We passed a barracks a few minutes later. On the parade ground there were 30 or 40 tanks, an equal number of truck-towed field guns, and perhaps 75 trucks. All were aligned in neat rows. There were gun covers on all the guns. A single sentry in a tower strained his neck to follow us.

Over other small towns, isolated farming communities. A land of soil tillers, a land where every square inch is utilized, but still a land unable to feed itself. A hopeless problem, for there must be sons. The family cult demands that. The government doesn't have to offer a bounty for children in

Japan. It is the duty of a man and wife to have children.

We flew over Toyohashi and Oka Zaki—the same pattern of destruction we had witnessed earlier in the morning was repeated. Then Nagoya, formerly one of Japan's great manufacturing cities. Aircraft and aircraft engines were made here, in modern factories. Several of the factories must have been as big as the Consolidated plant at San Diego.

Nagoya had had "the business." The 20th Air Force and the Navy planes had worked it over a half-dozen times and the "residential" slums had been eradicated. Three red fire engines sat disconsolately in an open waste that stretched around them for ten city blocks in all directions. How had these puny machines escaped the fire, we wondered. How impotent were fire engines to combat thousands of fires springing up simultaneously all over the great city. Millions of blobs of sticky fire—not like the fires firemen are used to fighting. And even if they were used to fighting fires like those set in the cities of Japan, and had the equipment, the whole thing was impossible. The mechanisms of these cities were destroyed. The power was off, water mains and sewers broken.

The colonel took lots of pictures. There were more people on the streets of Nagoya than there had been in Tokyo. Street cars were running, and outside the city trains were being shunted around. (Inside the city the train tracks had been ripped apart and the roadbed obliterated by bombing.) We passed a canal and from the bank children waved at the plane. The adults did not wave, but they stared.

"Well, that's enough pictures. Let's go home," the colonel said. We headed south, out to sea, towards Guam. We climbed to 17,500, levelled off, and Gary put it on automatic pilot, "George."

"Christ, what a wreck that place was," the major said.

"They asked for it. They got it," Gary said.

END

A Marine With OSS

A new side of marine activities is revealed by the assistant chief of all subversive operations in France, who tells how our intelligence worked with French underground, the Maquis, to harass Nazi troops and to help negotiate their surrender.

By Capt William F. Grell

WE were flying at about 3,000 feet when we noticed the first lights of France near Saint Malo. The blackout was not well enforced and we could pick them up easily. Just past the French coast we ran through heavy flak. We could hear occasional fragments hit the fuselage. The pilot got me on the inter-com and called, "Hey, Yank, look at all that crap coming up there on our starboard." He took evasive action for a few moments, —then set straight course for Le Mans.

We had a load of weapons, mostly Stens, ammo, explosives and other gear to drop to the Maquis of the Montagne Noire. A few months before this flight the combined OSS and British organization had dropped a sub-organizer, "Detective," to lead the resistance around Toulouse and to the south-east. Detective now had about 300 men and he needed equipment and a crack radioman to maintain his contact with headquarters. With us was

Mac, a 24-year-old Scot, who was going to jump and handle the radio.

My mission, besides giving Mac a good briefing, was to talk with the Maquis leader from plane to ground over the radio and discover the strength of both Maquis and Nazi forces in the region, their composition (FFI or FTP in the case of the Maquis) and what the resistance needed in the way of equipment. The latter subject had to be carefully approached. The Maquis invariably asked for more than they needed—anticipating future recruits and responding to the natural wish to build up a reserve—and we had to prune their requests to a size within our capacity to deliver and which at the same time would maintain their effectiveness.

We passed over the brightly lighted PW camp at Le Mans—one of our check points—and swung south across the Loire River toward the Garonne. By the tiny blue light in the central compartment of the plane—the only light—the helmeted plane crew had a satanic appearance. Further reflections



A motley column of 2,500 Nazis surrendered to the Maquis and OSS without incident.

along this line were ended abruptly by the rear gunner's report of five Nazi fighters on our tail. The single machine gun he manned was our sole defense and, should these minions of the Luftwaffe decide to close, we were sitting ducks. The anxious moments that followed were punctuated by the play by play account of the actions of the Nazis coming from the tail gunner over the intercom. After a few long moments he reported, "They are losing us—either they didn't spot us or they're students and prefer to ignore us." We relaxed somewhat.

WE passed through the flak belt at the Garonne and passed over Toulouse. Now the problem was locating the pinpoint rendezvous—a field on the outskirts of the village of Pamiers, some 55 kilometers south. We dropped to 600 feet and began to study the terrain, alert for particular fence rails, brooks, groups of houses and clumps of trees. With these as guides we came to what we thought was the field. More anxious moments and then the letter "L" was flashed to us from the ground. We made no reply, but immediately circled and made one trial pass at the field. Mac shook my hand and got ready to jump. The dispatcher readied the material to be dropped and I began working the radio for a ground contact. Another circle and the second run. The material went over the side. On the third run, Mac jumped. For five agonizing minutes the radio was dead. Then I picked up a fragment of a transmission which included the word "Freddy"—our pass word. Shortly I was in clear contact with "Richard" (Detective). His accent, his London friends and a few other items checked right down the line, so I went ahead with business.

"Hello Richard, this is Bill, a friend of Jerry's. We bring you a radio operator and 12 containers. How is everything?"

"Everything is shaping up all right, but we need a lot of help."

"How many men have you now?"

"Three hundred and fifty-six, but I could get 500 more easily if you could send weapons and ammo."

"Limit your force to what you have for the present. I'm coming back day after tomorrow with more Sten guns and grenades."

"Swell. But we need some long range weapons. We would like also some American carbines. And if you could add a couple of light machine guns we would be very grateful."

And so it went for 55 minutes, one of the longest radio contacts ever made under such circumstances. There were risks, but the good accomplished outweighed them. Before we left, Mac got on the phone. "Please write a few words to Mother and tell her I arrived safely and not to worry if she doesn't hear from me for a long while."

The conversation ended with the expletive made famous by Cambronne, which among the chutists

About the Author

The author, Capt Grell, joined the Marine Corps the last day of 1942 and after training found himself assigned as assistant mess officer, subsequently mess officer, at Camp Elliott—he thinks because of his experience in hotel work. Headquarters considered that his 43 years removed him from consideration for combat duty and turned down several applications for transfer. In May of



Capt Grell

'43, a chance meeting with LtCol Hall, OSS representative on the West Coast, allowed him to talk his way out. LtCol Hall discovered Capt Grell's Belgian birth, his fluency in French, Flemish and German, and his familiarity with the western European countries. Without going into details, he promised the captain an intelligence job and also some action. The captain expressed his interest.

Two weeks later, Capt Grell received an ALNAV to Headquarters in Washington and was there ordered to duty with OSS. Three months were spent in special training in OSS camps. Then he went to London for duty as American representative with the British organization similar to OSS.

Shortly thereafter, Capt Grell was made assistant chief of operations for the joint American British organization which directed and supplied the French underground. He worked in this capacity until D day, when he became chief of operations for the organization under the supervision of Etat Major Francaises de l'Interior for the Southwestern Zone. While on duty in London, he made numerous flights over the continent, such as he describes in the first part of his story. He was not permitted to go into the field until September of 1944—the time of the Limoges-Sancoins incident.

The GAZETTE offers Capt Grell's story as one of several to be printed about the little known activities of marine officers and men in the European and Mediterranean theaters of operation. In the opinion of the editors, these stories present a new side of marine operations.

was synonymous with good luck. Then we turned and began the dreary run toward home.

The flight to Toulouse was one of many such operations which the OSS carried out in the ETO to support the French forces of resistance and harass the Nazis behind their own lines. All sorts of equipment were dropped by chute to the underground and hundreds of organizers jumped into enemy territory to play hide and seek with the Gestapo while they worked with the underground to help bring about the debacle of the Nazis in the west.

When I first arrived in London in September of 1943 to join the OSS work with the underground on the continent, the U. S. had two active agents in France. On D day, there were 110 men in the "field."

WE followed a definite procedure. The SHAEF gave us the specifications of a particular job to be done. We then selected men to execute the mission, trained and briefed them, got them to their place of operation, maintained contact with them and if necessary (as it was in several instances) got them out when they got too hot for their own safety and for our purposes.

As the situation developed, the officers we dropped into France welded the underground into one overall unit and through them we could control, with a few exceptions, the entire resistance movement of the country. The chaos they created in the Nazi rear was the fruit of a carefully planned, daringly executed campaign. For example, due largely to Maquis efforts, several divisions earmarked as mobile reserve for the planned counter-attack against the American beachhead never did succeed in reaching their appointed station until after the breakthrough at St. Lo—when it was far too late.

Estimates of the importance of the role played by the underground in the rout of the Nazis in France have varied. Of its effectiveness there can be little doubt. Vice Marshall Inglis, British Assistant Chief of Air Staff, not a prejudiced source, wrote Col Buckmaster, one of the unit's chiefs: "It must be most gratifying to all of you to watch your past efforts being so well rewarded. Things are certainly going well in that line and may even play a bigger part in Germany's defeat at this moment than Army or Air Force." We were flattered, to say the least, but what was important to us was that we were doing our job as part of a smooth working team.

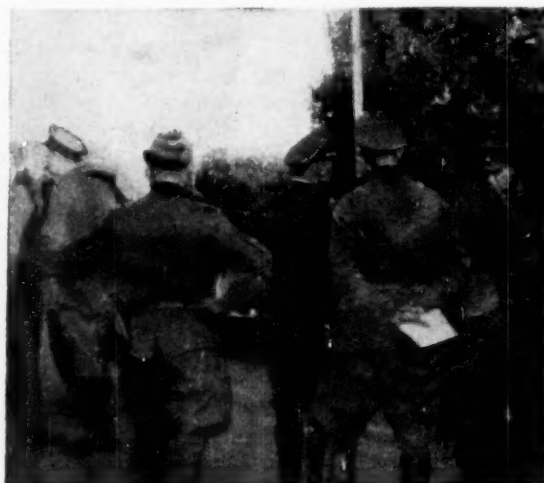
From the beginning—in the selection of personnel—the utmost caution had to be exercised. Training was of a highly specialized nature and necessarily exhaustive. Briefing for a particular mission sometimes took several weeks. Thoroughness was an essential—because once the agent was in the field he was on his own, and his success depended on his training and skill.

We were working with an unusual type of individual. Many had natures that fed on danger and excitement. Their appetite for the unconventional and the spectacular was far beyond the ordinary. It was not unusual to find a good measure of temperament thrown in. In dealing with them, a knowledge of each man's background and an understanding of him as a person was essential. They were of different nationalities and backgrounds and, because they were to work in teams, they chose their own partners. There were many strange mixtures, but they always worked out well.

After 11 months of operations, the work which could be handled out of headquarters was pretty well finished up. There was, however, much to be done in the field. I was finally allowed to go into the area and on the ninth of that month received orders to direct all operations in the Southwestern Zone. The mission was twofold: to intensify guerrilla warfare on retreating Nazi units and complete the liberation of the region. This done, I was to corral all my men and get them to headquarters for questioning. The second half, strangely enough, posed more problems than the first.

I landed in Limoges, which had been liberated by the FFI. But the country between that city and the American lines was literally infested with Germans. On the north bank of the River Garonne, near Bordeaux and the Pointe de Grave, there were 25,000 to 40,000 Nazi troops. Another 20,000 were moving through the Angoulême-Poitiers area, trying vainly to retreat through the northeast gap near Bourges and Vierzonville. Twenty-five thousand Nazis still occupied La Rochelle and St. Nazaire and other scattered groups of an estimated total strength of between 5,000 and 10,000 remained in Puy de Dome and Allier.

On 11 September, I requisitioned a car from the



The Nazi officers had lost their swaggers.



The Nazis used trucks, carts, bicycles, almost anything on wheels, to surrender.

French and with two officers as assistants drove to Montlucon. We stopped there and saw the German torture chambers (which were all they described and more) and then proceeded to Chateau de Cerilly in search of a Maquis unit we knew to be in the locale. On reaching the Chateau, which was humming with activity, we learned of the unit's plans for an ambush of a German column of 2,500 who were supposed to be leaving their billets in the village of Sancoins for Nevers.

Capt. Tardivat, the French Maquis leader, invited us to join the surprise party, and we accepted enthusiastically.

Shortly before midnight slightly over a hundred of us set out. At Sancoins we met another Maquis company under a Capt Garandeau, who had already set up shop along the escape route. The officers of both groups gathered at the village inn to discuss a plan of attack and to eat. Marine Lt Macomber, who had parachuted into the region several weeks earlier, joined us.

While we were eating, a sentry entered and reported that a German major under a truce flag wished to speak to the American captain who had just arrived. Regardless of the condition of the other branches of the Wehrmacht, Intelligence was still operating! The Nazi major's message was that Col Brucker, his superior officer, wanted to see me. My first impulse was to leave the table and go out to him, but the French would have none of it. They insisted that I send word that I was eating and did not wish to be disturbed but would see the colonel at eleven the following morning. Realizing that it was basically a French show and that a display of too much eagerness might be unwise, I complied. Besides, if 19,000 fully-armed Germans planned to surrender to us—200 Maquis—as was

rumored, we needed time to discuss the situation and figure out what to do with them.

The upshot of the discussion was that seven of us, well supplied with grenades and submachine guns, would run the German lines that night—known to be in the vicinity of Bourges, 60 kilometers to the northwest—and try to reach American outposts. We set out, in two cars, and ran at full speed. Chief hazards during the trip were the dead horses along the road. We encountered no one until we reached Bourges, where we were challenged by FTP sentries. These people worried us nearly as much as the Germans. They were all youngsters, itching for a chance to blaze away with their Stens, and their enthusiasm, plus the notoriously light trigger pull of the Sten, made us nervous. The sentries told us that the FTP had just entered Bourges and that the Germans had left the day previous. We also learned that the nearest American outposts were at Orleans, 150 kilometers north across the Loire, whose bridges were completely blown. We had a council of war. We were tired, it was two o'clock in the morning and I had an eleven o'clock appointment with a Nazi colonel. While trying to find a place to sleep, we learned that an American colonel had passed through a few hours earlier, headed south. We concluded that a surrender offer had been tendered and that the colonel had been sent as an envoy.

We snatched a couple of hours' sleep and then started back for Sancoins. We finally found some gas, managed to miss all the dead horses, and made a fast trip. On the approach to Sancoins there was a white flag in the middle of the road. Surrender? Then we spotted a caravan of four cars led by two Maquis motorcyclists coming toward us. We stopped abreast of them. There was a French colonel in the first car, Roussel of the Colonne Mobile of Au-

vergne. The rest of the passengers were high ranking Nazi officers, including Col Brucker. The party was enroute to Nazi Gen Elser's headquarters. We were invited to join.

We swung around once more and started for Arcay. One of the German cars got a flat. We left it with the driver and distributed the passengers among the other cars. I found myself with a hugely fat German major practically in my lap. We passed through the German barricade and entered a camp full of armed Nazi troops and frightened-looking French farmers.

When I entered the chateau grounds, I saw an American officer leaning out a window. He saw us and came down, greeting me with the exclamation, "How the hell did a marine get in here!"

At the chateau we got the full story of the last 36 hours. A German officer had encountered an American patrol south of the Loire and wanted to discuss surrender terms. Gen Macon of the 3rd Army sent Col French south with terms which provided for an armistice from midnight 13 September to midnight 14 September, during which all Nazi troops west of the River Cher, with their arms, were to divide into three columns and march to the American lines, where they would be disarmed. American planes were to fly over the columns to protect the French population against spite fires and demolitions.

We were primarily concerned with that column which was to leave Sancoins and go to Nerondes. We were given the job of reaching the Maquis and preventing isolated patrols from attacking the columns and creating incidents which would inevitably provoke cruel reprisals for any villages in the Germans' path. We returned to Sancoins and contacted all the Maquis leaders, who promised to carry out the instructions. However they posted sentries and patrols all along the route of march—scattering them through the woods and fields paralleling the road—just in case. The armistice was extended to dawn of the 14th to take care of Nazi stragglers, after which time open warfare would be resumed.

The next morning two other officers, an enlisted man and myself stood at a crossroads outside of Sancoins and reviewed a motley column of 2,500 Nazis—using trucks, carts, bicycles, almost anything that had wheels for transport—as they started for Nerondes.

The surrender was accomplished without incident and Southwestern France was free, with the exception of three coast towns, St. Nazaire, La Rochelle, Point de Grace.

I then started the roundup of my agents, which in some instances was far from an easy job. During the process of liberation they had been kings of their particular castles. They were men of position and power in their neighborhoods, had money to spend and lived well from sources so hidden that even scavenging Nazis could not locate the supply. In some instances they had pleasant social contacts that they were loath to give up. Headquarters and Paris held no attraction for them. I reached the headquarters of one couple at Limoges and learned that they had gone to Marseille. I went to Marseille. They had returned to Limoges. I returned to Limoges and discovered that they had gone back to Marseille. Unwilling to spend further time trying to accomplish singly what a well organized and informed Gestapo could not do—that is, catch up with this couple—I left their orders at their headquarters with strict instructions that on their return to Limoges the orders were to be put in their hands and they were to come immediately to Paris.

During the travels over Southwestern France we were able to investigate first-hand the effectiveness of demolitions done at our order and to meet numerous Maquis leaders and groups we knew only by name. We also searched for missing agents and gathered information which was helpful in tracing them further.

After returning to Paris I went to Brussels, Antwerp and the region to the north for a brief mission, then returned to London and made a complete report of activities. Then to Washington, and, in response to a telephone call, back to London in five days to take charge of the Belgian and French section of the OSS. From then until VE day this section concentrated on parachuting French and Belgian officers into the National Redoubt in Southern Bavaria and the Austrian Tyrol on intelligence missions.

These men, and the men who dropped behind the lines in France did a superb job under conditions that were difficult in the extreme. The marines among them were right up with the best.

Most Wounded Marines Back in States

For the week ending 24 October, 1945, over 13,000 enlisted marines and 1,174 officers were being cared for in U. S. Navy hospitals, according to figures released by the U. S. Navy Medical Statistics division. Overseas hospitals (including hospital ships, base hospitals and fleet hospitals) showed a total of 1,093 enlisted marine patients and 98 officer inmates indicating that most of our wounded marines have been returned to the States for hospitalization.

Finale at Yokosuka



The Fourth Marines, first to fight the Japs, spearheaded forces landing in Japan.

By Corp Fred R. Travis

THE Japanese navy captain handed his sword to the marine lieutenant colonel and saluted.

With this simple ceremony at the Kurihama naval base, less than 500 yards from where Admiral Matthew Galbraith Perry and a marine detachment landed 92 years earlier, American occupation forces took control of the Yokosuka Defense Area.

A single artillery battery, armed with machine guns, rifles and pistols, but no large guns, arrived in trucks and jeeps to do the job which might have cost 10,000 American lives for amphibious conquest. The artillery battery stood in ranks on one side of the road, and Japanese officers stood on the other side. Capt Yoshikata Hiraoka, commandant of the Yokosuka Defense Unit, made the formal surrender to LtCol Walter S. Osipoff, 28-year-old commanding officer of the 1st Battalion, 15th Marines.

Then the two officers and their staffs went into the Japanese commander's office to discuss demilitarization of the formidable defense works guarding the entrance to Tokyo harbor. Marine officers were surprised to find everything completely ready for the surrender. Capt Hiraoka took out a map showing details of the defense installations, including guns

so carefully camouflaged that marine patrols without maps might have spent weeks searching for them.

The Japanese staff turned over a complete inventory of all equipment. Subsequent investigation proved the information right to the last rifle and bayonet. All arms had been stacked neatly beneath signs identifying the equipment and giving the number. Even the barracks had English signs telling how many men were quartered in them.

Japanese naval officers displayed no reluctance to assist the occupation forces, and they responded promptly to all instructions about the movement of weapons and ammunition. All explosives, including mines and torpedoes, had been disarmed previously in accordance with Allied surrender instructions. Breech blocks had been removed from guns. But the Japanese defense unit commander said at least another month would be required to complete removal of all mines in the Yokosuka area.

In addition to torpedoes, mine-laying equipment and an assortment of anti-aircraft guns and small arms, the marines found three types of mines, one of them not previously reported, and twin mounted 8cm and 16cm guns, the first thus far discovered. Several other weapons not seen in action during the

war were turned over to military intelligence for study.

The Kurihama base was defended by powerful forts similar to those on Iwo Jima, complete with all facilities for their immediate use. This apparently had been the most important defensive point in the Yokosuka defense organization. Anti-aircraft guns were found concentrated throughout the area.

Japanese naval personnel of the Yokosuka Defense Unit presented no problem to the occupation troops. Preliminary investigation revealed no attempt at concealing weapons or information, although marine officers frankly had expected such trouble.

"The Japanese have acted by all the traditions and rules governing military procedure during our occupation of the Yokosuka defense area," LtCol Osipoff said. "When the Japanese captain presented his sword to me, it was evident that he and his officers were taking the surrender inwardly quite hard. Here was a man passing over to a foreign power everything that he stood for. Yet he looked me straight in the eye. He wasn't haughty. He didn't

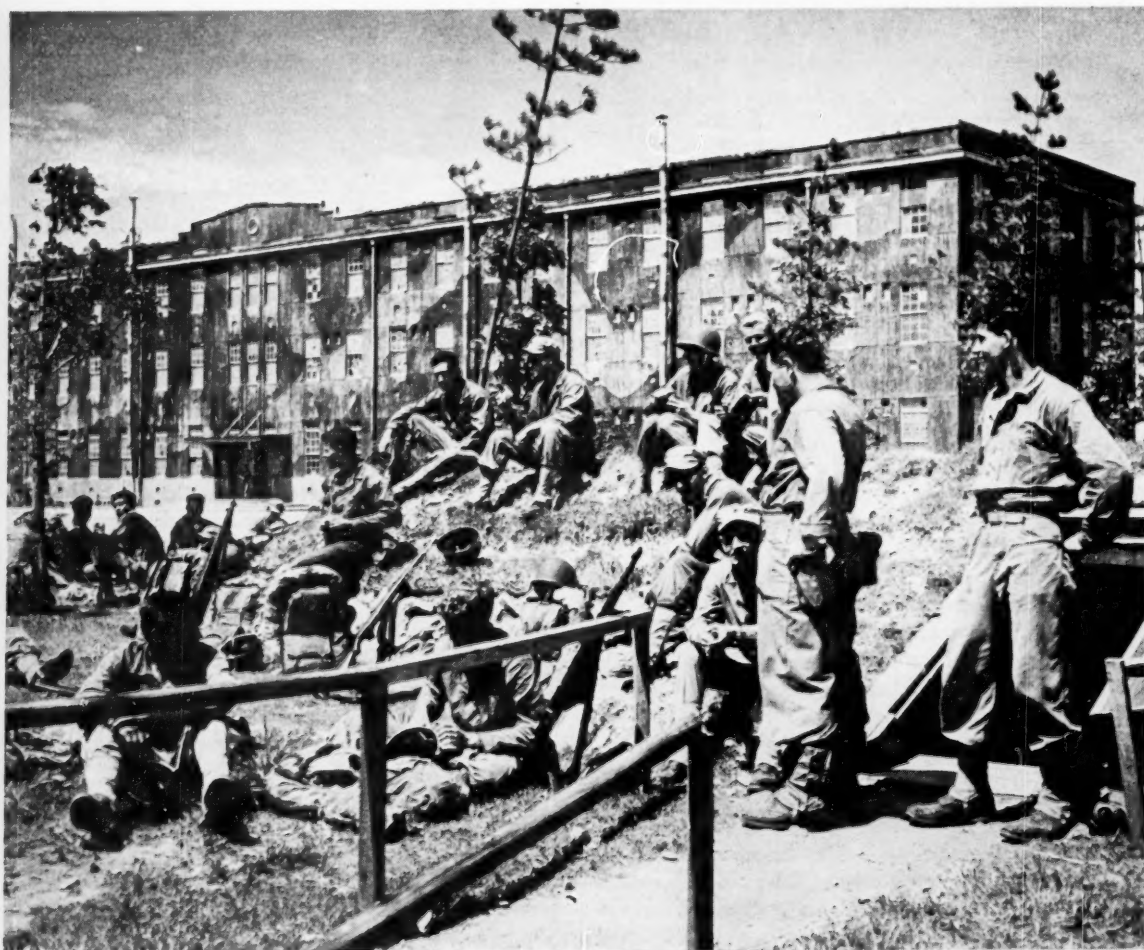
turn away. But he was obviously deeply moved.

"I felt sure he must be thinking that this surrender was something that went along with the military profession. You fight and lose and you must face the consequences.

"We have found no evidence of military disorganization," the colonel continued. "Usually in a defeated nation, it is expected that some authority inside the military service breaks down. It was that way in Germany after the last war and after this war, and the same thing has happened in almost every defeated nation. But we haven't found that in Japan. The men respond quickly and eagerly to their officers' orders. The officers show the same consideration for their men they might show in the field.

"Although most of the Japanese sailors and marines we have encountered seem extremely happy that the war is over, they still conduct themselves as professional military men. Whatever this fore-shadow is anyone's speculation.

"I take as strict a view of the Japanese as anyone else. They still are the enemy. They have given me



Members of the Fourth pause for a short rest after taking over the Yokosuka base.

some bad times in the past. But their conduct even in defeat is impressive—it makes one proud of the military profession.”

Commenting on the quality of troops found in the Yokosuka area, LtCol Osipoff said: “The troop units in the Yokosuka Defense Unit seem as good as any the marines have encountered in the field. The Japanese apparently operated on something of the same system that we did. Troops were rotated when possible, wounded men were returned to home bases, and there seems to have been no concentration of high-quality personnel here for the defense of the homeland.”

WHILE it will take months of research to determine all the factors causing Japan's defeat, the Yokosuka Defense Unit indicates that the military organization was not beaten in the same sense that nations have been defeated in the past. The Japanese military system in this area was intact and in good working order. Except for lack of transportation, there was sufficient equipment in the Yokosuka-Kurihama sector to defend this portion of Honshu. The equipment was scarcely comparable in either quantity or quality to that poured into U. S. installations in the Pacific, but the elaborate underground construction and the difficult terrain could have made the Yokosuka area as costly as Okinawa.

A good deal of equipment designed for an offensive was found. Over what period it had been accumulated and for what purpose could not be determined, but it is possible that, even to the end, Japan's military leaders dreamed of a counterattack against American-held bases. Some of this equipment included 27 practically new tanks with pontoons attached for amphibious landing. A 12cm mobile gun mounted on a medium tank chassis was found at a naval training station near Kubiri.

Numerous mine-laying vessels similar to our PT boats and some as large as an LSM were found at the Uraga navy yard. A Japanese officer said the smaller boats were capable of 40 knots for a ten-hour period. They may have been planned as torpedo boats, but there was no evidence of torpedo tubes having been mounted. A Japanese officer said all the vessels had been in good condition until hit by a storm shortly after termination of hostilities. He was anxious to know what disposition should be made of them before they suffered further damage.

A large railroad ferry boat and a coast defense boat of about 4,000 tons, comparable to our old, light cruisers, were found in the Uraga ways. These were nearly completed and might have been put into service in a few more months. A number of landing ships, crudely copied from American LSTs, were anchored at Yokosuka, along with a few badly battered warships, some of whose guns had been dismantled for land installations.

The Yokosuka area had suffered almost no damage from American bombings, despite the concentration of military installations along the Sagami pe-



A new-type machine gun emplacement helped guard the unused tank barriers at Yokosuka.

ninsula. Several buildings at an engineering school had been damaged by an explosion of gasoline and ammunition which the Japanese said occurred near the end of August while they were removing explosives in accordance with surrender instructions. But compared to the devastation at nearby Yokohama, the Yokosuka area was in almost perfect shape.

There was no evidence of any shortage of military supply here. Some warehouses were well stocked with ammunition which the Japanese had been unable to move before occupation troops landed. Troops apparently were well fed and complained only of shortages of sugar and similar items. One officer said his beer supply was almost exhausted.

In complying with occupation orders, the Japanese navy left everything in good order throughout the Yokosuka area. The barracks at the Yokosuka naval station had been cleaned, although Japanese sanitation standards were considerably lower than those required by American military forces.

Most of the Japanese troops in the Yokosuka area had been permitted to go home before occupation began. Small units retained for garrisoning the post along the peninsula were dismissed as rapidly as U. S. occupation authorities permitted. **END**

Amphibious Recon Patrols

In the future,

amphibious patrols may operate at distances that today seem impossible. Experiences in the South Pacific offer a foundation for any training plans. *By Col William F. Coleman*

THE claim has been made, rather unjustly, that reconnaissance patrolling of an objective to be seized in an amphibious operation is impractical because of transportation difficulties and the danger of alerting the enemy and thereby disclosing our interest in the area patrolled. That this claim is not entirely true was proved repeatedly in the South Pacific during the recent war. Sending reconnaissance patrols to the small, heavily garrisoned atolls of the Central Pacific would have been foolhardy, but the larger land masses offered patrolling opportunities that did not exist on the atolls.

In amphibious operations, as in conventional land warfare, it is necessary to utilize every possible agency to gain intelligence of the objective. A commander planning an amphibious operation is entitled to just as thorough a search for information as is any other commander. Perhaps his need is even greater, for there can be no halfway measures in this type of warfare. Once the operation starts it either succeeds or fails utterly; there can be no falling back to reorganize and try again.

There are many sources of information available to a commander, the chief ones being aerial photography, reconnaissance patrolling, interrogation of prisoners, interrogation of former residents, examination of existing maps, and military studies of the objective. During early operations in the South Pacific, prisoners of war were of little help for they usually knew little about any place except the one where they were captured. Former residents were of some help, but usually if two or more were interrogated their information was so widely divergent that the net result was zero. The remaining items, maps and military studies, were conspicuous by their absence. As a result, aerial photography and reconnaissance patrolling remained as the only positive means of obtaining intelligence. And, considering the dense jungle growth universally present in the South Pacific as well as the difficulty of obtaining adequate photo coverage of anything other than airfields, the emphasis in the search for military intelligence was placed on amphibious patrolling.

Where amphibious patrolling was conducted, the information obtained by even the poorest patrol was so valuable that in several cases whole plans for an operation had to be recast. To illustrate this fully the history of amphibious patrolling in the South Pacific after the capture of Guadalcanal will be reviewed. But before recounting the exploits of these patrols it will be well to recall to mind the basic principles to be observed in the conduct of

amphibious patrolling. They are few, and basic:

1. A patrol must be so constituted, both as to size and equipment, that it can operate in its assigned area with minimum danger of detection.

2. Personnel assigned must be well trained in amphibious patrolling and be in good physical condition.

3. Patrols must be given simple missions capable of accomplishment and of sufficient importance to warrant sending out a patrol.

4. Patrols must be allowed sufficient time to accomplish missions assigned.

5. Patrol leaders must be chosen for their known ability and intrepidity.

6. Before departure from base, patrols and the commander of transporting craft must be carefully briefed as to where and how they will be landed and where and how they will be recovered.

As the following accounts are read, these principles should be kept in mind in order that a comparison can be drawn between what should have been done and what was actually done.

AFTER Guadalcanal and the Russell Islands had been secured, plans were made for the seizure and occupation of New Georgia. (See Sketch 1.) The initial plans considered involved a division landing on the eastern end of the island, which was thought to be only lightly guarded. The division was then to move overland to capture Munda airfield at the other end of the island. The division commander concerned, on having this plan presented to him, expressed considerable doubt as to the feasibility of landing at the places under discussion or of moving an entire division overland through the jungle and supplying it. It was also doubted that one



Sketch 1: Area reconnoitered on New Georgia.

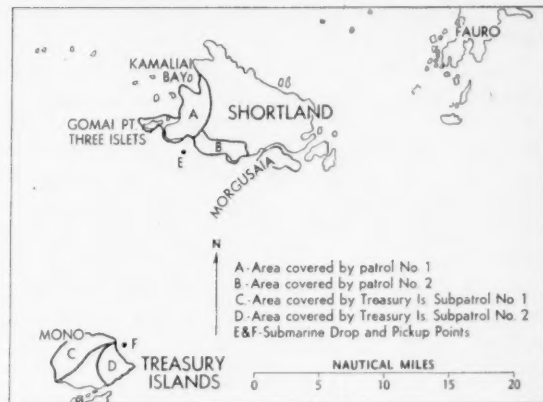
division would be able to cope with the opposition believed to be on the island.

To answer these questions the I Marine Amphibious Corps dispatched to New Georgia four small patrols from the raider battalions, each composed of an officer, a few enlisted men and native guides. All personnel had received strenuous training for the type of work they were about to undertake. These patrols were given brief, specific missions to determine the character of landing beaches, nature of the terrain and communications, and hostile strength and dispositions within the areas assigned. New Georgia had been divided into three areas, each of which was assigned a patrol. The fourth patrol was assigned Kolombangara as its objective. (See Sketch 1.)

The trip was made by Dumbo (PBY) from Guadalcanal under cover of darkness, and all patrols were landed on the eastern tip of New Georgia, at Segi, on 21 March 1943. From Segi they moved to their assigned areas, either by native canoe or by overland movement, and began their reconnaissances. They remained ashore until 10 April 1943, which gave ample time for them to cover their assigned areas thoroughly. Groups reassembled at Segi, where they were picked up and returned to base safely. The information of hydrography and terrain they brought back, coupled with the photographs they took, was quite complete. Data from friendly natives, plus the patrols' own observations, gave a fairly complete picture of Japanese strength and dispositions. Their information proved beyond a doubt that the original plan was unsound, and on the basis of this more complete information a new plan was drawn and executed. The results are a matter of history. Each of these patrols had been well led, the men were well trained for the job, simple and specific missions had been assigned and ample time was allowed. As far as was humanly possible, every one of the basic principles had been adhered to in order to insure successful accomplishment.

The next step in the scheme of things from the viewpoint of the high command was to seize an area in the Northern Solomons. In such an area airfields were to be established from which the Japanese base at Rabaul could be neutralized, thus cutting off the Solomons.

Consideration was first given to landing on Shortland Island, just south of Bougainville. (See Sketch 2.) This was known to be a heavily fortified island, and aerial photographs left considerable doubt as to the existence of suitable landing beaches and suitable terrain for airfield construction. In particular, information was urgently desired as to the characteristics of the channel between Shortland and Morgusaia Islands. Again it was proposed to send two amphibious reconnaissance patrols up from Guadalcanal, this time by submarine, with the major mission of getting information about this channel. At the same time it was proposed to send an-



Sketch 2: Shortland, Treasury recon routes.

other patrol to Treasury (Mono) Island, just southwest of Shortland. There was a dual purpose in this; the lesser purpose reconnaissance of the island to determine its suitability for development of a subsidiary air base, the major purpose to create a diversion, because it was felt that the Japanese would eventually learn of our patrol activities.

THE organization of the Shortland Island patrols and the assignment of their missions violated every precept of good patrolling. Instead of being small patrols with short, specific tasks, the patrols grew to ominous size and finally had two typewritten pages of missions to perform. These patrols included naval personnel for the determination of hydrographic conditions, airfield engineers to locate airfield sites, marines for general military reconnaissance of terrain and enemy, and natives as guides. Strangely enough, a British officer, LtCol Trench, resident commissioner of Guadalcanal, headed these patrols, because of his knowledge of the island and familiarity with the natives living there. Few of the personnel were trained for the job assigned. These two patrols were assigned separate areas on Shortland to reconnoiter. One was to reconnoiter the reef, channels, terrain and hostile dispositions on the south coast, the other was to perform similar missions and also to seek airfield sites on the west coast of the island.

The Treasury Island patrol, on the other hand, was better organized and had the fairly simple mission of reconnoitering for enemy positions, airfield sites and hydrographic conditions.

Two submarines were requested to transport all these patrols, but only one was available. Before embarking, every member of the patrols and the submarine commander were carefully briefed as to the time and place the patrols were to be recovered and the recognition signals. This same procedure was used for all subsequent patrols.

The Shortland patrols were dropped off the south coast of the island shortly after dark 22 August 1943. The submarine then proceeded to Treasury

Island, where that patrol was dropped the same night.

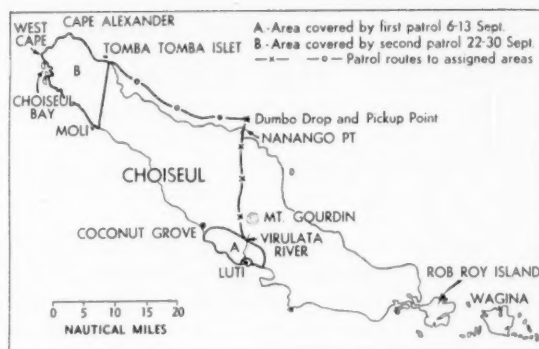
The I Marine Amphibious Corps staff had considerable misgivings about the Shortland patrols because they were of such unwieldy size for a small objective, but good fortune smiled and the patrols were safely recovered 28 August 1943, as scheduled. One member of these patrols had come face to face with a Japanese soldier in the underbrush near a rubber boat cache. Both individuals took off in opposite directions, and apparently the Jap either failed to report the incident or his superiors didn't believe him if he did, for nothing came of this chance contact.

The Treasury Island patrol split into two parts, one being responsible for the west half of the island, the other taking the east half. They had an uneventful time ashore and on 28 August 1943 the submarine that recovered the Shortland patrols also recovered this one, and all hands were returned safely to base.

Upon interrogation of the Shortland patrols, it was found they had been unable to carry out in entirety the missions assigned because time allowed was insufficient and because of Japanese activity. The much-needed information about the Morgusaia Channel was not obtained for the principal reason that the patrol had too many missions assigned and too little time allowed to accomplish them. Thus, the purpose for which the patrol was designed originally was overshadowed completely by the many minor tasks assigned. The limited information that was brought back, however, was sufficiently unfavorable to cause the high command to abandon the idea of occupying Shortland Island and to cast about for another area as a possible objective.

The patrol from Treasury, on the other hand, had completed its mission in a much more thorough fashion. The information it brought back more sharply focused official attention upon this place as a possible location for an airfield, although further consideration of it as an objective was held in abeyance.

Attention next was turned to Choiseul Island as a possible objective to be seized and on which to construct airfields. Air photos indicated the possibility of constructing a strip on North Choiseul, so it was decided to send patrols for a more detailed reconnaissance. (See Sketch 3.) Accordingly, the first patrol to be sent was organized. It consisted of two marine captains, a navy lieutenant (jg), and two enlisted marines, one of whom was a photographer. This patrol was assigned rather formidable missions, inasmuch as the navy wanted it to reconnoiter a fairly long stretch of beach for hydrographic conditions, while the marines wanted a reconnaissance made of a fairly large area inland to determine the possibility of building airfields, the extent of communications, if any, as well as the location and activity of the enemy. In order to over-



Sketch 3: Two patrols operated on Choiseul.

come one of the faults of previous patrols, viz., insufficient time, this patrol was not given a time limit but was told to remain ashore long enough to complete its mission, then to contact the base via coast-watcher's radio and ask for return transportation. This was done, and the patrol was picked up by Dumbo (PBV) on 13 September 1943, after having been ashore seven days.

This patrol was well led, and did a most thorough job. Its hydrographic reconnaissance was excellent. The terrain reconnaissance was well supplemented with photographs which told more emphatically than the patrol leader could that the area was entirely unsuited for airfield construction. No enemy was actually encountered, but sufficient information was gained from the natives to give an excellent picture of Japanese patrol activity in the area.

The results of this patrol again indicated that the high command had to seek further for its objective. This patrol had two far-reaching results, however, which were not visualized at the time. One was that the Japanese found out about it and dispersed part of their forces in a series of small garrisons all along the south coast, and at the same time sent in to Choiseul some reinforcements from Bougainville. The other result was that the information gathered by this patrol aided considerably the diversionary action of LtCol V. H. Krulak's battalion in the same area in October.

ATTENTION was now turned to the northwest end of Choiseul. Air photographs were incapable of furnishing an adequate story of the area, so another amphibious patrol was organized by I Marine Amphibious Corps, in conjunction with the Navy. This patrol was a heterogeneous organization, consisting of a commander (CEC) USN, two marine captains, three naval lieutenants, a New Zealand flight officer and two enlisted marine photographers. Most of the personnel assigned had little or no previous training in patrolling and consequently were not physically hardened for the rugged work which lay ahead. Many of the missions were believed impracticable of accomplishment but, after much consideration, it was decided to give them to the patrol

anyway with the hope that the answers could be found.

The senior marine officer was designated patrol commander, which put him at somewhat of a disadvantage since he was not the senior officer in the patrol. However, cooperation was good and he exercised his command without difficulty. It should be pointed out, however, that for the most positive leadership a patrol commander should be the senior officer in the patrol.

The missions assigned were, in general, these: a. thorough terrain study; b. location of all possible airfield sites; c. location of all possible radar sites; d. location of all possible supply dump sites; e. thorough hydrographic reconnaissance of the entire coastline of northwest tip of Choiseul; f. to determine and observe enemy activity of any kind and obtain information about enemy's strength, disposition, condition and defense measures.

It was pointed out that any one of the above missions constituted a complete assignment for one patrol, and that all of them constituted a career. The missions stood, however, and on 22 September 1943 the patrol proceeded by Dumbo to a point off the northeast coast of Choiseul, where it was met by the coast-watcher. Once ashore, it split into two sub-patrols to more rapidly cover the large area assigned. The coast-watcher accompanied one of these sub-patrols, while native guides accompanied the other. As with the previous patrol to Choiseul, this group was to remain until its job was finished, then, via coast-watcher radio, to ask for return transportation.

In spite of the mixed nature of the patrol and larger number of missions assigned, the personnel performed near-miracles in covering the area and finding answers to all the missions capable of accomplishment. One of the naval officers fell sick shortly after getting ashore, which restricted activities of one sub-patrol for a few days. After eight days ashore the patrol had accomplished all it could and asked for transportation, and on 30 September 1943 it was picked up by Dumbo and returned to base.

The information brought back by these patrols was illuminating. Possibilities for airfield sites existed, but the many disadvantages outweighed the advantages. All thought of an operation on Choiseul was, therefore, abandoned.

This patrol, more than any other, stands as an example of everything a patrol should not be, except that it had good leadership. Only an excellent leader could have overcome the disadvantages under which this patrol started out. An item of interest in connection with this patrol is the fact that the Japanese learned of its presence and tried to contact it without success. They made life miserable for the coast-watchers for a time, but fortunately were never able to do them any harm.

(The second installment of Amphibious Recon Patrols will appear in the January GAZETTE.)

Return to China

THE marines have returned to their second home—China—after an enforced absence of four years. They departed at a time when Japanese aggression in China had reached flood tide and as the enemy was preparing for its attack on Pearl Harbor.

They returned as conquerors. The veteran 1st Marine Division, which fought at Guadalcanal, Cape Gloucester, Peleliu and Okinawa, occupied Tientsin, to assist their brother-in-arms, the Chinese, in disarming Japanese troops and maintaining order. **(The Tientsin surrender is pictured on back cover.)**

Part of the 3rd Marine Amphibious Corps under command of MajGen Keller E. Rockey, was joined in China by the 6th Marine Division, which occupied Tsingao.

Marines first landed in China on 24 Feb 1844 with "considerable display," to impress the Chinese with the importance of Caleb Cushing, the United States' first minister to China.

From the time of that first landing through the next 100 years China was a second home to the marines. On numerous occasions they were called into action to safeguard American interests and uphold U. S. prestige. In the 1890s, during the Sino-Jap war, marines defended the U. S. legation at Tientsin.

When the Japanese captured Seoul, Korea, marines were again called to guard American nationals and the consulate. They also saw action during the Boxer Rebellion in 1890. In 1927, when the Chinese Nationalist Army began its extension of control from Shanghai northward, the 4th Marine Regiment landed at Shanghai.

In 1932 and in the years that followed, marines stood guard over American interests in Shanghai and other Chinese cities while the Japs battled Nationalist forces. Although hostile feeling between the Japanese soldiers and the American marines was no secret, and marine tempers were often strained, there was no open break. To ease the growing tension, the 4th Marines were withdrawn to the Philippines in late 1941 only to engage the Japanese a few months later at Bataan and Corregidor.

There's a Ceiling On Aviation Jobs

By Lt J. Davis Scott, USNR

A WELL-WORN Biblical verse might be paraphrased to read, "For though many were called, few will be chosen," to explain for the veteran the postwar employment opportunities in airline aviation.

More than three million men and women were called to duty for varied roles in the aviation forces of the Army, Navy, Coast Guard and Marine Corps. Only a comparative few—probably less than one-sixtieth of the armed forces' air total—will be needed to fill new jobs to be created in the airlines within the next five years.

There have been many imaginative stories, some of them originated by people who should know better, about the opportunities veterans of America's air forces will find waiting for them as flying or ground personnel of the airline companies.

Estimates of these opportunities have in many instances run completely out of bounds. They range up and down the scale, the most recent top forecast being that within the next five years the airlines will have 100,000 new and varied jobs available. Unfortunately for the aviation veteran, many of these highly publicized statements are not based on facts.

I have spent many hours, since the war's end, discussing job possibilities with the personnel department heads of five of the nation's largest airline companies. These men, who have their fingers on the pulse of airline opportunities, spoke frankly and made no attempt to hide the true facts.

Here is a brief summary of what they said:

1. For pilots there will be steadily decreasing opportunities after the first of the year. A large number of new co-pilots have been employed in recent months, but many pilot openings are presently being filled by the companies' own returning veterans and by Army reservists who have been released on inactive duty status to the airlines. Applications are welcomed, though, for every airline is anxious to secure topnotch pilots—and there will be opportunities, though probably not in large numbers, as airline passenger and cargo business expands. However, it must be emphasized that only the best all-around pilot, i.e. one with personality as well as flying ability and one with at least two years of college training, will be employed.

2. For mechanics and related ground personnel job opportunities will be greater. There may be from 6,000 to 26,000 openings within the next five

More than 3 million served in U. S. air forces in the war, but airlines will create new jobs for only one-sixtieth of that number in the next five years.

years. There is a need now for skilled men. Mechanics and others who have worked on transports and bombers—especially the B-29 Superforts—are preferred. But those with marked mechanical ability, no matter what type of plane they have worked on during wartime, may find a place. The wartime experience of the applicant for a mechanical job will, in a large measure, determine his starting salary.

3. Air crew members—navigators, flight engineers, radio operators—are needed only in small numbers. These openings may be filled by January 1946—probably before then.

4. For the veteran, man or woman, who is willing to start at the bottom, there are openings in limited numbers in the airline service branch as passenger agents, reservationists, counter salesmen and the like. But if you don't want to start at the bottom don't bother applying.

5. There are a few openings, but only a very few, for junior meteorologists. War experience will help win the jobs. There are no openings for chief meteorologists no matter what the experience of the applicant. Chief meteorologists come up through the ranks in the airlines.

6. Positions as stewardess or hostess aboard an airliner offer a number of opportunities for women veterans—but these posts require a background with at least one year of college or the qualifications of a registered nurse. There are a number of openings for positions as stewards on transoceanic skyliners. Like the positions open to pilots, these jobs are steadily decreasing in number.

7. Sales, promotion, publicity and related fields—where air combat intelligence and public information service records might help the applicant's chances—offer a few opportunities for high type applicants. But there are just a few opportunities.

8. There will always be openings for topnotch men such as tax, tariff, personnel, industrial relations experts, safety engineers and others of marked executive ability and background. At any time, however, opportunities of this type are few.

9. No matter what job a veteran may seek, his selection will depend, in a great many instances, on things besides his background and experience. The most important of these factors, all personnel heads explained, is his personality—for personal "umph" makes impressions and wins jobs.

Now, let us examine the entire airlines job field, its possibilities and opportunities, in order to give the veteran the complete picture.

There are 22 domestic and international airline companies in the United States. Four lines, namely, American Airlines, Transcontinental and Western Air, United Air Lines and Eastern Airlines, have in recent years transported about four-fifths of the total volume of domestic traffic and employed two-thirds to three-fourths of the workers engaged in commercial operations. All have ambitious and far-reaching plans for the future and three of the four, Eastern being the lone exception, will be flying Atlantic and Pacific transocean routes. Pan-American Airways, pioneer of the transocean commercial flying business, holds top place in the international field and will soon invade the domestic field. I spoke with the personnel department representatives of all five.

THERE are some uncertainties about the postwar airline situation. A number of applications for new routes, which would carry American passenger and cargo-toting planes into new and strange places, are pending. Availability of equipment has much to do with the immediate future and job opportunities for the next year or so. And one cannot definitely predict just what volume of traffic the airlines will carry.

Several experts in the aviation business have attempted to analyze the postwar airline situation. Dr. Edward P. Warner, vice chairman of the Civil Aeronautics Board, has forecast within five years a yearly total of 12 billion passenger miles, while a study of the Business Research Department of the Curtiss-Wright Corporation foresees only seven billion passenger miles by 1950.

The United States Department of Labor's Occupational Outlook Division, relying heavily upon the Warner and Curtiss-Wright forecasts, in April 1945 reached these conclusions regarding job possibilities in the airline companies:

"For pilots, the lowest postwar employment figure arrived at was little over 6,000, the highest not quite 15,000. This would be a gain of roughly 2,000 to 10,000 above present employment in commercial and military contract activities. For mechanics and related personnel, the range of employed possibilities envisaged was 20,000 to 40,000—6,000 to 26,000 more jobs than at present. Comparable gains were found to be in sight for stewards and stewardesses and for ground communications operators. In the other occupations studied—flight engineers, radio operators, navigators, dispatchers and meteorologists and stock and store employees—present employment is so large relative to probably postwar needs that a sizable gain in job openings may be expected only if the more optimistic forecasts of airline traffic prove to be correct."

The personnel department representatives felt they could not subscribe to the highly optimistic employment figures that envisage up to 100,000 new job openings between 1945 and 1950. They cannot foresee a great number of opportunities

even though, as one department head explained, "The airlines industry is quite small and expansion is just beginning."

However, no matter whether you take the moderate or more optimistic viewpoint, you readily see that job openings ranging from 18,000 to nearly 50,000 over a five-year period are tiny when compared to the armed forces aviation roster of better than three million men and women. These figures serve to emphasize the statement of an airline personnel executive who said, "The airlines are interested in the best men and women obtainable."

One thing is certain. What jobs the airlines have to offer will, in most instances, go to veterans. The serviceman is first choice in every airline employment lineup. Most airlines are at present employing only veterans. Eastern Airlines, whose president is the dynamic Capt Eddie Rickenbacker, is quite emphatic about its stand on veterans. "The veteran gets first choice," is the way Eastern's creed was explained. "If two persons, one a former serviceman and the other a civilian, apply for the same job, the job goes to the veteran—no matter what kind of a story the civilian might give as his reason for not donning a uniform. We feel," said the personnel department spokesman, "that the serviceman, even though he may never have left this country, has given more during the past four years than any civilian."

And there are opportunities, too, for wounded men. Capt Rickenbacker recently said in a public statement that Eastern was anxious to employ amputees because there were many airline company jobs they could handle, including, as the famed World War I ace said, "my own job as president." The other airline companies have established special departments to handle the employment of amputees and wounded servicemen. Amputees, who have been working for several months in the airline mechanical shops, have proven their worth—and the record of these former servicemen is opening the way for others who have similar wounds.

Although his flying ability is recognized by the fact that he receives a higher starting salary than any other new employee, the airlines insist that even a veteran military pilot start at the bottom of the employment ladder. He begins his airline career as a student and then as a co-pilot. The refresher course usually lasts two months and then the new employee moves into a co-pilot's seat, where he stays for as long as three years in some cases before he qualifies as a first pilot and captain, with the privilege to command the sky-borne passenger and cargo ship.

The co-pilot employee usually starts his career at a monthly salary of about \$220. The United Air Lines pays \$165 and the American Airlines pays \$190 to co-pilots during the refresher course period, and upon the completion of the course the salary is advanced to \$220 monthly.

Increments of approximately \$20 come to the co-

pilot every six months. Thus, at the end of four years' employment, the co-pilot who has not checked out as a captain and first pilot can figure on attaining a maximum salary of \$380 monthly. Most co-pilots check out as captain in one to three years. TWA had one exceptionally well qualified co-pilot who became a captain in less than a year—but this is a rare case.

AIRLINE captains receive a base pay ranging from \$1,600 to \$3,000 annually, plus flight pay ranging between \$4 and \$9 an hour depending on time of day, speed, terrain, etc. United captains fly approximately 85 hours a month, thus assuring them a minimum of \$555 monthly. Some captains on some airlines earn as high as \$800 monthly. Captains on the present and proposed transoceanic routes have different and higher pay rates.

The basic requirements for co-pilots' positions are fairly standard. A Civil Aeronautics Authority commercial certificate is a must, and two years of college training is another requirement most airlines insist upon. Among the big five, United is the lone exception in the college education demands and requires only a high school graduation certificate of its co-pilot applicants. United requires but 500 hours of flying experience, while TVA asks that applicants have 1,500 hours of flying time to their credit. In most cases the hours count more than the type of plane they have been flown in—but applicants with a great number of hours in twin and multi-engine planes get a preference. There is no truth in the statement, which has been passed around in recent months, that a fighter pilot is not wanted as an airline co-pilot. One company spokesman said that the fact that all airline pilots undergo a refresher course and then spend many months as co-pilots makes their service background unimportant other than as a preliminary step to an airline job.

The more instrument time you have logged the better chance you stand. Instrument experience is regarded as all-important. Some airlines have established 26 years as the top age for applicants, but American Airlines will take applicants up to 32 years of age. Height requirements range from 5 feet, 6 inches, to 6 feet, 2 inches. Vision must be 20-20 in both eyes without corrective lenses and there can be no color deficiency. Applicants are also required to pass company physical examinations and general intelligence tests.

It was interesting to note one thing all personnel executives emphasized in their talks with me. This one thing was personality. Because a great many of the applicants have the standard requirements, selection in many instances is determined by the impression the applicant makes upon the interviewer. In this respect, personality is most important—but other factors such as a clean, neat and pleasant appearance, courteous and considerate traits, a marked vigorous ambition and a confident

and reliable manner are also helpful to the job-seeker.

The spokesman for American Airlines told me: "There is no hard and fast rule regarding pilot applicants. We require many things but we will waive much if the applicant is the kind of man we want. There are exceptions to every rule. Personalities count. We are interested in what kind of a record the man made while in the service of his country. A man who rose from private to major and who did similar outstanding things will always find a reception."

The end of the European war gave the airlines their first real opportunity to employ co-pilots in large numbers. The immediate postwar demand is being met rapidly not only through discharges under the point system but through special arrangements with the Army Air Forces whereby veterans with proper qualifications, even though not dischargeable under the point system, can keep their commissions and be assigned to the airlines as reservists on an inactive status.

TWA employed co-pilots at the rate of 75 per month during the latter part of 1945—but in October TWA filled all but eight of the co-pilot jobs in the 1945 quota. A great number of applications were received and those accepted were placed in the monthly quotas without regard to the date they were employed. Other airlines are employing co-pilots in varying numbers for the balance of 1945—but all were experiencing difficulties in accurately determining their pilot needs beyond January 1, 1946. The armed services returned 150 pilots to Eastern Airlines in October and expected to return 100 more before the end of 1945. "These 250 pilots, most of them captains, will have to be placed before we can think of employing new co-pilots," said the personnel spokesman. Pan-American has not made public how many co-pilots it will need for its worldwide airways system—but "applicants will be interviewed and applications are welcomed."

THE pilot profession, insofar as the airlines are concerned, will not be continually expanding. Within the next 18 months the airline companies should have nearly all the planes and equipment, except replacements, they will need to carry on the enlarged domestic and international operations. Thus it can readily be seen that the limiting of planes will also limit the number of pilots and co-pilots.

Dr. Warner forecast a total of 1,200 to 1,700 planes in domestic operations by 1950, which, at an average of 3.5 to 4 crews per planes, would mean, says the Department of Labor, the employment of a flying personnel of between 16,300 to 19,500. The Department of Labor estimates, providing Dr. Warner's forecast proves true, the total employment by 1950 of between 9,500 to 12,000 pilots and co-pilots, 800 to 900 flight engineers, and 6,000 to 6,600 stewards and stewardesses in domestic operations. For international operations, the

Labor Department's survey estimates by 1950 the total employment of from 1,300 to 2,800 co-pilots and pilots, 300 to 900 flight engineers and mechanics, 250 to 700 navigators, 400 to 1,400 radio operators and 700 to 1,400 stewards and stewardesses. The Department estimated that in late 1944 there were at least 4,600 pilots and co-pilots on duty with U. S. airline companies.

The greatest need, at present, is for mechanics. "Any veteran who has had any experience in the installation, maintenance, overhaul or operation of mechanical devices or mechanical equipment such as aircraft engines, aircraft instruments, radio, radar, automotive equipment, motors, etc.," says the Air Transport Association, "can probably qualify for a position as a mechanic, junior mechanic or apprentice. It is the practice of most airlines to allow credit for experience when establishing the beginning rate of pay for positions of this type."

ALL of the airline company men with whom I spoke pointed to the need for mechanics of all types. The new routes will mean new stations and new stations will mean new jobs—particularly in the mechanical fields. The airlines employ mechanics and mechanic helpers at the main overhaul stations and in "line maintenance" or "servicing" of aircraft at route stations.

Most of the airlines pay about the same wages for mechanics and mechanic helpers, as well as for the other mechanical jobs. Eastern Airlines pay from \$1 to \$1.14 an hour for the following jobs: aircraft and engine maintenance mechanic, engine and accessory overhaul mechanic, aircraft overhaul mechanic or specialist, sheet metal mechanic, aircraft accessory specialist, rigger, machinist, propeller specialist, welders, fabric and upholstery specialist, aircraft electrical technician, radio technician. Only the first mentioned job, that of aircraft and engine maintenance mechanic, requires a CAA special license. Most of the airlines conduct mechanical schools which aid in the securing of CAA licenses. Like many other important airline posts, the chief mechanics are usually men who have come up through the ranks. Mechanic helpers usually receive 65 to 94 cents an hour, depending on their education and experience, as a starting wage at most airlines.

TWA, Eastern, United and American maintain no central employment office but all have divided the nation into four zones of employment and each zone handles its own employment problems. Typical of the zone arrangement is the setup in the TWA organization, which is as follows: Eastern, New York City; Central, Chicago; Midwest, Kansas City; Western, Los Angeles.

Non-flying jobs such as passenger agents, reservationists, counter salesmen and the like offer to the accepted applicant a starting salary of between \$127.50 and \$135 a month. In six months a man

who begins at \$127.50 will be earning at least \$142.50 a month, and within a year his monthly salary should be at least \$155. A man who begins at \$135 monthly will be upped to \$147.50 by the end of six months and to \$162.50 at the end of his first year of employment. These are basic minimum advances which the five big airlines assure their employees. Most of these airline employees wear uniforms which they are required to purchase themselves.

However, as the American Airlines personnel spokesman explained, "an employee's advancement is usually not determined by fixed rates but by the employee's own initiative and ambitions. The airlines move up from within and a man has a chance to go places—if he wants to—and if he makes good the minimums will not be his standards. Usually the man who just does his job doesn't last long."

Here are more typical salaries for non-flying personnel as paid by Eastern Airlines: teletype operator, \$120 to \$150 per month; operations clerk or agent, \$150 to \$235 per month; traffic clerk or agents, \$150 to \$235 per month; store employees \$175 to \$290 per month.

The non-flying jobs are without exception the type which start new employees at the bottom of the employment ladder as advancements come from within. As one personnel man explained, "90 to 95 per cent of the jobs offered today by airlines require that the new employee start at the bottom. But there is no limit to where he can advance—providing he has the ambition and the ability."

Even the non-flying desk jobs have educational requirements—and college trained applicants get the preference.

Stewardesses usually start at \$125 a month and go up the scale. One year of college or a registered nurse's certificate are basic requirements, although personality, appearance, etc., are mighty important, too. Pan-American requires that its Atlantic route stewardesses speak French fluently and that the stewardesses on the Latin American skyways speak Spanish with ease.

Nothing in this article is intended to discourage any veteran who has decided or is deciding to seek a career in air transportation. I have attempted to emphasize that the airlines, even though their future is most promising, can employ but a small percentage of the great numbers of service aviation personnel—and only the best.

Capt Rickenbacker summed up the future to be found in air transportation when he said, "This is America's greatest frontier for individual achievement and opportunity."

Somewhere in the Army, Navy, Marine Corps and Coast Guard are the Rickenbackers, Pattersons, Fries, Trippes and Hugheses of the future and there are others, too, who have the personality and boundless ambition the airlines want. To them the door of opportunity will always be open. **END**

Why Not Rocket Artillery?

The rocket

has many characteristics which make it valuable as a weapon for amphibious troops, but research will be necessary to perfect it for such a purpose. *By LtCol Floyd R. Moore*

THE Marine Corps in its search for weapons adaptable to amphibious warfare has turned to the rocket. During the last year of the Pacific war, the rocket units supported the advance of marine infantrymen. This trend follows a similar use of this weapon by the Russians and the Germans in Europe.

The rocket possesses many characteristics which make it valuable as a weapon for amphibious troops: (1) the materiel is very light in weight, resulting in a great saving of shipping space and in high mobility on the battlefield; (2) the rocket launcher has an extremely high rate of fire which results in a heavy volume of fire easily massed on any specific target; (3) rockets are extremely flexible with respect to tactical employment and method of attacking targets.

However, the rocket also presents certain disadvantages which serve to limit its employment. These are: (1) excessive dispersion which makes the rocket suitable only as a weapon for the engagement of area targets and makes undesirable its employment as a weapon for the close support of ground troops; (2) the flash and blast resulting from firing makes the launcher position easy to locate by enemy observers and, consequently, more

readily subject to enemy counter-battery fire; (3) the low muzzle velocity makes the rocket unsuitable as a direct fire weapon and results in a limited range.

The choice of equipment for, and the tactical employment of rocket units employed by the Fleet Marine Force have not been those calculated to produce the maximum benefit from such a weapon. Marine rocket units employed in the Pacific have been armed with Navy type materiel and ammunition. This equipment is not well suited for field units. The Navy 4.5" barrage rocket contains a slow-burning propellant which results in a very short range of some 1,200 yards. Furthermore, the Navy type launcher, primarily designed for use on small ships and landing craft, must be adapted to mounting on some type of wheeled or tracked vehicle to provide the necessary battlefield mobility. Such mountings are not capable of accurate laying and reduce accuracy when engaging targets.

Rocket materiel and ammunition developed in recent months by Army Ordnance is much better suited to the needs of the Fleet Marine Force than that in use at the time the war ended. The primary advantage is that this Army equipment was specifically designed for use by field forces. The 4.5"

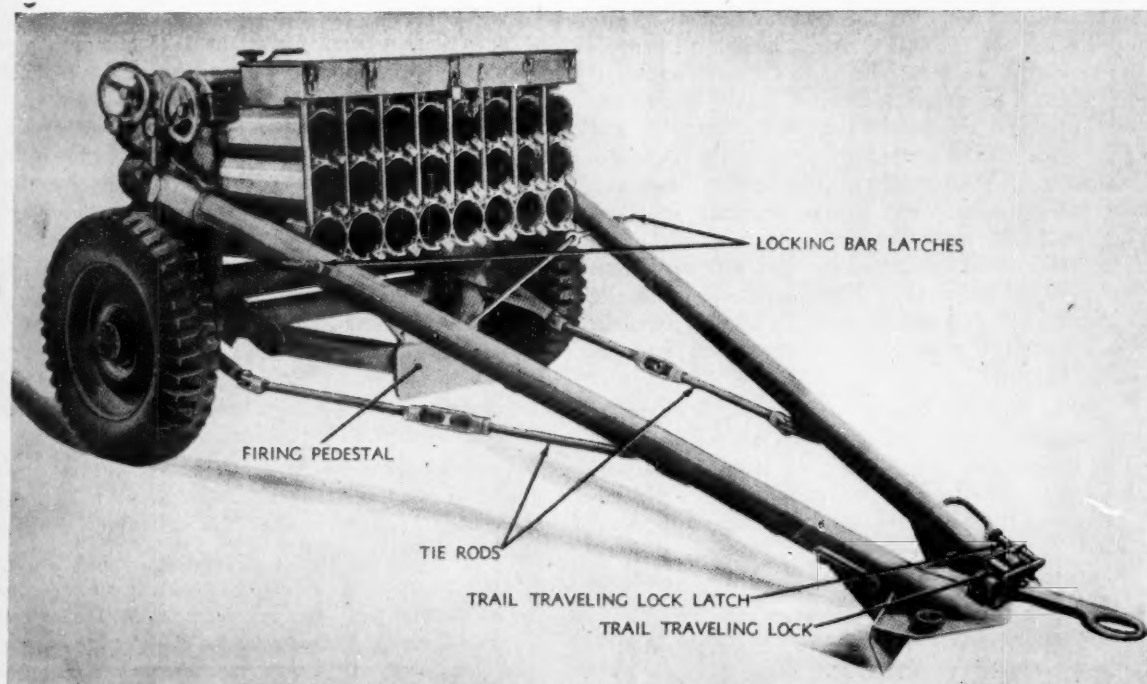


Figure 1: This T-66 rocket launcher, shown in traveling position, holds 24 rockets.

spin-stabilized HE rocket M-16, which utilizes artillery type fuses, possesses many of the characteristics of artillery ammunition (see Figs. 3 and 4). It has less dispersion than the fin-stabilized type of rocket and is capable of a maximum range of 5,200 yards. Moreover, other types of ammunition, including WP and time fuses, have been developed with essentially the same ballistic characteristics as the M-16. The 24-tube launcher, T-66 (see Figs. 1 and 2), weighs only 1,250 lbs. and is capable of being towed by the $\frac{1}{4}$ -ton truck. However, a larger prime mover is ordinarily used to enable a launcher section to carry its crew and ammunition. This launcher is laid for direction and elevation by a conventional field artillery sighting system similar to that utilized on ordinary cannon.

The same tactical employment of marine rocket units, in the past, has been characterized by their attachment to infantry units. To a certain extent this method of employment can be attributed to the type of equipment with which these units were provided, since the short range of the Navy type rocket reduces materially its flexibility. Such employment, however, is not calculated to gain the maximum benefit which should be derived from such a weapon. The rocket in its present state of development is an *area* weapon. Even the spin-stabilized rocket has a much greater dispersion than an artillery shell. The 4.5" HE rocket M-16 has a similar trajectory and comparable characteristics as to blast and fragmentation effect with that of the 105mm artillery shell firing charge 3, but dispersion is much greater. For example, at a range of 3,500 yards the size of

the dispersion pattern for the 105mm howitzer is eight yards in deflection and 200 yards in range, while the pattern for the M-16 rocket is 360 yards in deflection and 656 yards in range.

The fact that the rocket is essentially an area weapon makes it unsatisfactory for employment in close support of ground troops. For this reason rocket units should not be attached to regiments or smaller infantry units. The infantry needs weapons which can neutralize or destroy point targets, and the rocket is not well adapted to this mission. On the other hand, field artillery is designed for the neutralization of area targets and it may be noted that this is the mission for which the rocket is best suited. Unless the fire of a rocket unit is closely integrated into the fire plan of the artillery, much of the effect of the heavy volume of fire which these units can deliver will be lost.

Targets for which rocket fire is appropriate are: enemy troops in the open, in trenches or in assembly areas; enemy strong points and light field fortifications; vehicular assembly areas; command post, ammunition and supply installations; harassing and interdiction fires on important areas; and hostile counter-attacks. It will be noted that all of these targets are ones which are normally engaged by field artillery units and are of an area nature. Also, the problems of survey, observation, fire direction and ammunition supply for rocket units are identical with those encountered by field artillery units. The conclusion drawn is that rocket units should be a part of the field artillery of a command and that they should be employed in field artillery roles

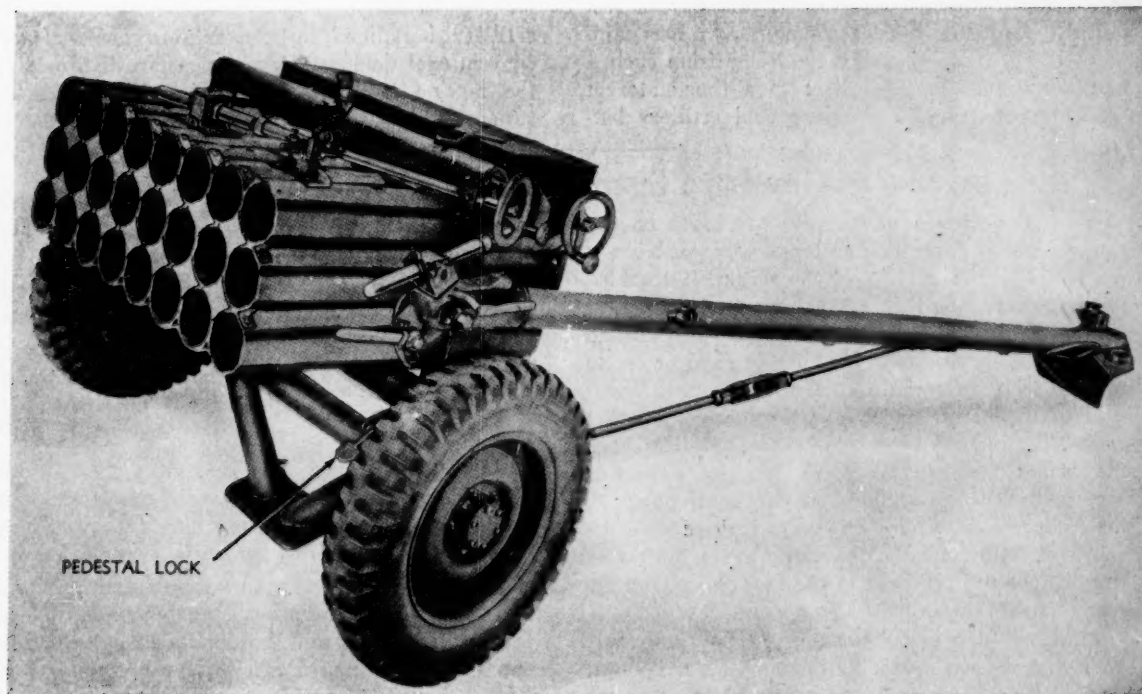


Figure 2: This is a front view of the T-66 rocket launcher in normal firing position.



Figure 3: Spin-stabilized rocket and fuze.

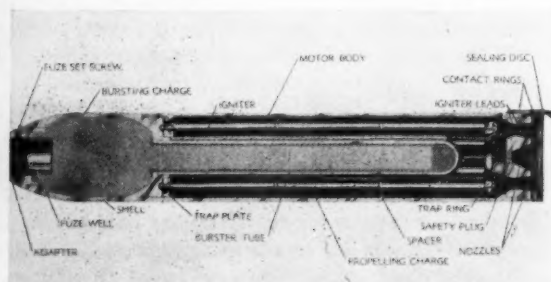


Figure 4: Sectional view, unfused rocket.

under the direction of the field artillery commander.

A rocket battalion organized along conventional field artillery lines would contain more fire power than three ordinary field artillery battalions. Such a battalion, containing three batteries of 12 launchers each, would be capable of delivering 864 rounds in a single battalion volley and would have a sustained rate of fire of 2,592 rounds every four minutes (three volleys). A single volley from such a battalion would be equivalent to a time-on-target concentration from 72 ordinary field artillery bat-

talions. Such a battalion attached to a marine division would more than double the fire power of its field artillery.

Action reports from the Pacific frequently stressed the fact that, after the initial landing was effected, not enough artillery was present to place the desired amount of massed preparatory fires in front of the infantry as the advance progressed inland. Shipping restrictions in amphibious operations will always restrict the amount of field artillery which can be carried and landed because of the weight and the bulk of such materiel. The rocket presents a solution to the problem of increasing fire support available to a landing force, with only a small increase in the personnel and equipment which must be carried and landed. The rocket cannot replace conventional field artillery for close support or long range missions, but it can relieve the field artillery of many mid-range missions, thus making more field artillery available for close support. In particular, rocket units can provide the additional weight of metal which is needed for preparatory fires.

Even though the ease of detection of the rocket launcher site plus its limited range and excessive dispersion precludes the rocket replacing conventional field artillery, the Marine Corps, in its search for a weapon to increase the fire support of its amphibious troops, has found a weapon capable of the task. It remains to insure that equipment, ammunition and tactics which will provide the maximum support to the infantryman are adopted. At the present time the T-66 rocket launcher and the M-16 HE rocket represent the best materiel and ammunition of this type available for the support of ground troops. Organization of rocket field artillery battalions for the reinforcement of our conventional field artillery is a means of providing the marine infantryman with the additional fire support which is his right.

Tiny Fuze Sparked Radio Projectile

When the curtain of secrecy was lifted on the radio-operated fuze that automatically explodes a projectile within 70 feet of the target, it revealed the important role that a tiny wind-turbine played in its development. The wind-turbine spins around 40,000 times a minute to supply electrical power to the radio circuit operating the fuze.

With a rotor no larger than the face of a pocket watch, the turbine begins to spin at its dizzy pace the instant the projectile leaves the gun. The turbine in turn drives a generator that feeds power to the radio circuit, where waves are emitted with the speed of light. As the projectile nears the target these waves are reflected to the fuze's receiving antenna and set off a detonating mechanism.

Engineers first began work on the proximity fuze back in February, 1942. First idea to emerge was a fuze operated by an "electric eye." As the bomb or projectile neared the target, the normal intensity

of light was interrupted and the "eye" acted to flip a switch that exploded the projectile.

This was followed shortly by the first radio-type fuze in which a battery supplied the power to the radio circuit. Then in the fall of 1943, engineers came up with the turbine-powered fuze that made for safer handling and contained an improved radio circuit.

Both the "electric eye" fuze and the battery-operated radio type unit were designed for rocket detonation, while the wind-turbine fuze was used extensively by the Army for aerial bombs.

The projectile fuze for anti-aircraft guns, mortars, and howitzers was a battery-operated radio unit, no larger than a pint milk bottle, which used its nose cap as an antenna. Parts for the unit had to be designed strong enough to withstand a pressure during flight of 10,000 times their own weight.

Be Careful in the Clear

The enemy may seek to

cause confusion by spreading false reports when we are forced to abandon code in radio communication. To avoid this, always authenticate! By Capt Miles R. Browning, USN

IN communications, the term "the clear" means plain language, i.e., text not encoded or enciphered. Transmissions by voice, radio, visual or any other means, when in the clear, are as completely significant to any casual ear or eye which may happen to catch them as they are to the specific addressee. In such case, should the eye or ear be hostile, the enemy has been furnished exactly the same information as has the friend.

When and when not to use the clear in military operations has long been a bone of contention between the advocates of extreme speed on the one hand and those of extreme security on the other. In the early months of World War II, the pendulum of authoritative opinion swung back and forth under the impulses furnished by each new incident in the progress of the German blitzkrieg. It reached an ultimate position favoring unrestricted tactical use of the clear immediately following the Nazi breakthrough into northeastern France in May 1940.

Here Allied commanders repeatedly witnessed the explosively swift application of German air and armored strength at critical points blocking the advance of their spearheads. On intercepting radio receivers, they could hear the enemy calls for such attacks in plain language—and observe their execution within a period of minutes, or even seconds, thereafter. Nothing like that had been dreamed of by the excessively security-minded British and French field commands. Nothing like it had been conceived by our own observers at the front. All reports stressed the necessity for abandoning clumsy codes and ciphers in action. The British, in particular, emphasized the fatal consequences of their own system of codified orders to air units at the scene; by the time the messages got through and were acted upon, it was already far too late.

The testimony was impressive—in fact, conclusive—as far as the use of clear for orders and reports in *close tactical action* was concerned. In practically every armed service in the world, the principle was adopted forthwith. Adopted, that is, with relatively minor qualifications which found their way into the agenda as a result of the never-say-die efforts of the security advocates. These consisted mainly of emphasizing the fact that "clear" was normally suitable only for transmissions involving immediate execution, and of making mandatory the provision for authentication of every plain language dispatch.

This was excellent. We—and our allies of the future—had, at long last, burst the shackles which had inhibited full tactical exploitation of the flexi-

bility of our mobile weapons. The futility of the old compulsory formula—"decide, encode, transmit, decode, act"—for combat had at last been fully recognized.

The new freedom was seized upon avidly, particularly by the air components of the U. S. services. Close coordination between ground—or surface sea—and air elements improved at once and enormously. The great bugbear of the previous years, i.e., the fear that the enemy would intercept the order and thus be able to counter effectively, proved to be a harmless mouse so long as we observed the principle of confining use of clear to the immediate action where developments were too swift. Nearly every exercise and training maneuver in our expanding forces seemed to point more clearly to the wisdom of dropping all restraint on the use of plain language in combat; *nearly* every exercise and maneuver—but, fortunately, not all of them.

There were instances of what could happen which focused a healthy regard on the necessity for adequate authentication systems. These same incidents, happily not in actual battle, brought out vividly the fact that the main danger in the tactical use of the clear is not necessarily the imparting of information to the enemy, but, rather, lies in the opening which it gives him to transmit false orders and information to our own forces. The sound of an individual's voice over the air, a characteristic transmitter note or operator's key technique are of themselves totally inadequate safeguards against this; a simple and secure system of authentication provides the only insurance which can be relied upon.

HERE are a few of the episodes in our field exercises which helped to bring recognition to the vital need for authentication every time the clear is used.

In a joint exercise off Panama, the air defense forces of the Canal Zone were attempting to locate and attack an approaching (pseudo) enemy carrier. The ship herself overheard the conversation between pilots of the flight, searching for her in an area of heavy rain squalls in which she was then steaming. From their chatter, she gleaned the first names of the lead pilot and the commander of the flight, as well as the call of their home base on the isthmus. She thereupon put a transmitter on the frequency they were using, called the flight leader and ordered him to return to base immediately. She used the call of the home base as her own. The entire attack flight withdrew and returned to their fields without further ado and the carrier was not located.

In a fleet exercise off Southern California, the

opposing battlelines were being maneuvered by voice radio in the clear. Authentication was not being strictly enforced in one of the lines. The commander of the other ordered a maneuver on the part of his opponent's ships, using intercepted calls and their frequency as ascertained by his radio intelligence unit. Some of the ships executed the order and some, distrusting it, did not. The result was complete confusion in that force and a clear-cut (game board) victory for the enemy.

ANOTHER incident offered a considerable element of humor while illustrating the point with equal force. On a base in California, some years ago, a bombardment aircraft unit was engaged in rehearsing procedure for a projected international flight which had been given an extravagant advance play in the press. Movies were to be taken of the flight takeoff, and the leader was drilling them in a parade procedure on the field to the takeoff line. The plane radios were tuned to a frequency which was so close to that in use by units based on an adjacent field that the more powerful transmitters in the bombers completely blocked communications in the other units. On this particular day, the latter outfits had been in the air on certain tactical training exercises and their leader had been so completely estopped from accomplishing any work by the radio interference that he was forced to cancel the operations and return to the field. En route, he passed close over the other base and observed the rehearsal on the ground, accompanied by a constant stream of radio coaching. First names of pilots were being used as calls, and the exhortations of "Come up a little, Pete." "Ease over, Bill," etc., which had filled the air for hours, were still going on. Smarting from the morning's frustration, the group leader passing in the air picked up his microphone and ordered, "Give her the gun, Pete, and take off!" The ensuing burst of activity on the field—not to mention that over the air as the bomber commander attempted to straighten out his scattered formation—afforded ample evidence of "Pete's" acceptance of the transmission as bona fide.

Perhaps the crowning example of what lack of proper authentication can mean occurred at Pearl Harbor during the chaotic hours following the Japanese attack. Throughout 7 and 8 December 1941, every warning and tactical communication circuit was jammed by fantastic reports of enemy landings, shellings, sightings, air attacks. With only a few exceptions, these were "phonies," put out by carefully planted Fifth Column agents who were familiar with frequencies used, names of key personnel, local nomenclature and terminology. Their activities

culminated in a hoax so spectacular as to merit immortality. At 2200 on 8 December, a conference in the inner office of the Commander-in-Chief was interrupted by a telephone call reporting that "Japanese troops are landing in gliders on Fort Shafter; we are firing on them." The informant spoke in perfect English and gave his name as Major (Blank). The news seemed incredible. To check the report, a staff officer called Fort Shafter back on the phone in the same office where the conference was in progress. He asked to speak to Major (Blank)—the same officer who had first reported the alleged landing—and received the reply that he was talking to him. The staff officer then asked for verification of the original report. The answer came back "Yes! That is correct; we are firing on them now!" There was a moment of consternation before it was realized that the easterly trade wind, blowing directly from the fort toward Pearl Harbor, only a few miles away, would have brought the sound of any firing clearly to the ears of those in the office. Of course, the incident proved to be another "phony" by enemy agents.

Each of the foregoing episodes points forcibly to the imperative need for definite identification of the source of any order or report which is in the clear; in other words, for proper authentication. There was no branch of our services which did not appreciate this need in World War II. Neither was there any lack of that appreciation amongst our recent enemies, and particularly the Japanese. Everyone *knew* about it—but not everyone practiced it. It was in this fact that the danger lay, for the Jap had given abundant evidence of his readiness and ability to capitalize on any slackening on our part in the matter. The records of the Pacific war are replete with instances of complete dropping of guard, or, at least, fatal hesitation by Allied troops when accosted by English-speaking Japanese in the dark. Such occurrences were, in their essence, breakdowns in authentication security.

Passwords and countersigns are direct kin to radio and visual authenticators. That we used them was known to the enemy from the outset; just as we knew that he did likewise. On countless occasions the Jap intercepted and tried to use authenticators employed by our forces on land, at sea, and in the air. At times he succeeded in his purpose. The lesson from this is vital to every soldier, sailor and marine, i.e., it is only by unrelenting vigilance and tireless use of a system which does not admit of breakdown during the period of its employment, that we can keep security for the plain language transmission. *When in the clear, be careful; authenticate!*

Navy Mutual Aid Association membership has been reopened to all regular permanently commissioned and warrant officers of the Navy, Marine Corps, and Coast Guard on the active list, not over 45 years of age, and midshipmen of the Navy and cadets of the Coast Guard. Application may be obtained from Navy Mutual Aid Association, Navy Department, Washington 25, D. C.

What is SOP?

By Maj Howard J. Rice

ALTHOUGH most officers today are familiar with the letters, "SOP," surprisingly few know the real meaning of *standing operating procedure*. Such understanding is vitally necessary to the staff officer or the commander who is faced with the task of writing, revising or merely approving an SOP that is to apply to a combat organization in the field. If this standing operating procedure, as defined in words and published to the command, is a good one, the combat efficiency of that command may be increased tremendously. But if the document is a poor one the procedure, as published, can have an enormous negative effect on the organization's efficiency.

What is standing operating procedure? It is worthwhile to point out immediately that the first word of the phrase is *not* "standard." The word "standing" is more accurate; it is used to convey the meaning of "in effect right now;" in other words, that operating procedure which applies currently, in contrast to the more permanent and inflexible connotation of "standard."

Standing operating procedure may be defined as "a uniform procedure which is followed in order to duplicate previously approved actions, without requiring the issuance of detailed orders." To enlarge on this, SOP is a method of procedure which has been successfully followed in the past, and which can be applied to *similar* situations when the same results are desired. It is properly an order of the *command*, normally issued as a *general order*. It is not an unwritten set of methods which all hands "just seem to know."

Before anyone can have an accurate understanding of this subject, however, he must have a clear idea of the relationship of orders, SOP, and doctrine. Perhaps this relationship can be made more precise in concept if the growth of any combat organization is compared to the growth of a man. In the beginning the child is without experience, and therefore many detailed orders are required to guide his development in the correct direction. These orders control his behavior. But gradually the child accumulates his own share of experience; situations repeat themselves, and the child develops a way to handle each of them—a method founded on the original orders and on what he has learned about the matter. For example, before the child is possessed of any experience, he must be told in detail how to perform the rather complex activity of tying his shoes; but with repetition he learns how he can tie his shoes with the minimum demand

It may be applied to subjects with a uniform and predictable pattern, and experience must determine to a large extent what it contains.

on his creative thought. He soon has a standing operating procedure for one specific task—a method of procedure which has been successfully followed in the past and can be applied to similar situations when the same results are desired. SOP is founded on experience. This particular SOP for shoe-tying cannot become fixed or standard, for it will need to be modified slightly to meet variations. It is therefore "standing" procedure—not "standard."

As the child matures, he will learn that many of his procedures as established for certain matters are definitely the best, and he will employ these procedures until they become so thoroughly known that no further conscious reference to them is required. These jelled patterns of behavior are *doctrine*. Many aspects of our living have become doctrine; there are certain matters with which we cope automatically. But even the mature adult, with his set of doctrines and with his standing operating procedures for handling situations that change a little, will always be confronted by situations which demand new orders or new solutions.

It is apparent then that a human being may cover some of his daily activity with an SOP, that other portions of it will have become doctrine, but that many situations will demand new solutions with each encounter. In the military organization some aspects of the unit's activity may be covered by a standing operating procedure, and other aspects will become doctrine because they are the only approved methods of execution; but there will always be situations that can be met only with new solutions, predicated new orders.

A STANDING operating procedure may be applied only to those subjects which have a uniform and predictable pattern, and experience must determine, to a large extent, what the SOP contains.

The general mission of SOP is to reduce the number of detailed orders that are needed, but in a military organization there are four reasons for the use of it. These are: (1) to simplify and abbreviate orders, to permit their being understood easily and with certainty; (2) to simplify and perfect the training of troops; (3) to promote understanding and teamwork between the commander, his staff, and the troops; (4) in general, to facilitate and expedite operations and minimize confusion and errors.

How one document can fulfill the purposes of an SOP can be seen from an examination of a portion of one specific general order issued by the First Marine Division under the title, "Standing Operat-

ing Procedure for the Collection, Handling and Forwarding of Prisoners of War, Captured Documents and Captured Materiel."

In the first place, the use of this SOP will simplify and shorten the intelligence annex to any operation order as written by this organization. In the annex, under paragraph heading, *Measures for handling prisoners of war and captured documents*, will need to appear only this remark: "See General Order 182, SOP."

To demonstrate how it will simplify and perfect the training of troops, here is one sample excerpt:

"Upon capture, POWs will be disarmed and searched for articles of intelligence value. Articles will not be taken from prisoners as souvenirs. Prisoners will be allowed to retain helmets, clothing, gas masks, identification tags, insignia of rank and such personal items and articles of equipment not of intelligence or combat value as will contribute to their comfort. The unit effecting the capture of a POW will bundle and appropriately tag any documents taken from the prisoner, and will when practicable forward them in custody of the guard returning the POW to the nearest battalion or regimental command post."

Since this general order is distributed widely during the training phase, the above-quoted paragraph, as well as many others, provides a guide for uniform instruction throughout the command by furnishing information on this particular phase of operations prior to combat. Training is made simple through the prevention of conflicting or undirected instruction, and perfection is made possible through the establishment and announcement of a uniform procedure far in advance of the time when it must be employed in combat.

In a similar manner the SOP fulfills the third purpose of promoting understanding and teamwork between the commander, his staff and the troops by furnishing specific information which enables the entire command to know *what* is desired by the commander and *how* he expects it to be performed. This knowledge of the commander's expectations, derived from the SOP, also serves valuably to promote self-confidence and initiative in the staff.

The fourth purpose of facilitating and expediting operations and minimizing confusion and errors is, essentially, a summary attained by a fulfillment of the other three.

HAVING considered the purpose of SOP, the next question to arise is: What type of military subject may be covered by a standing procedure?

Although an SOP cannot properly be applied to those subjects which require new solutions with each new situation, nor to matters which have become doctrine, many aspects of combat operations can be covered to advantage with a uniform procedure. One example on a phase of intelligence activity has already been considered, but in order to get a broader concept of what can be included

in SOP, several other examples from organizations in the field may be examined briefly.

The First Armored Amphibian Battalion has an SOP which is composed of the following sections:

- (1) General, covering the purpose of the SOP
- (2) Ship to shore movement
- (3) Employment as assault guns
- (4) Employment as artillery
- (5) Command and staff functions
- (6) Communications
- (7) Supply

This document does not endeavor to cover the whole subject of armored amphibians in combat, but only those parts of a normal operation which lend themselves to a degree of standardization. Those instructions contained in the above sections are intended to govern only the usual, expected situations. In unusual situations the SOP does not apply.

As further examples of the kind of information which can be covered properly by standing operating procedures, here are the titles of a few:

Second Marine Division—"Administration"

Third Marine Division—"Medals and Decorations"

Fifth Marine Division—"Tank-Infantry Coordination."

Sixth Marine Division—"Burial and Graves Registration"

IT MUST be borne in mind that, in order to be governed by SOP, the matter must lend itself to standardization: it must have a characteristic pattern which can be foreseen, at least in many parts, in combat. The application of a standing operating procedure must make the matter more clear to those who are to participate, and the uniformity of execution which will be the result must make the operation more efficient than it would be without the SOP. But a uniform method for conducting an operation must not limit its effectiveness or deprive it of essential flexibility.

There are many subjects which cannot be included in an SOP. If the matter is such that it will be rendered less effective if shaped to a pattern and thus "standardized," it is not suited to SOP. This type of subject normally will be that one of unpredictable possibilities, that operation or phase of operations that will change radically according to the situation. The attack is one example of this kind of subject. Although some parts of the attack may be covered by SOP with good effect (such as the employment of flame-throwers or communications), the attack itself, as a whole, depends too much on the activity of the enemy for its pattern. The prescription of a uniform method of attack to be used in all cases would be disastrous.

A standing operating procedure is not, however, a magic document which springs into being, complete and perfect. A new organization may de-

velop its SOP on various subjects in one of two ways.

It may, for example, proceed without one, depending entirely on detailed orders until enough experience has been collected to provide the base for an SOP.

The second and more satisfactory method is for the commander and his staff to write a tentative SOP, based on standard texts as modified by their own previous experience in other organizations, and adapted to the new unit. The results of this SOP will be observed both in training and in combat, and changes will be made. Some subjects will be dropped and others will be added, and the amount of detail required in the SOP will gradually diminish as the experience of the unit increases. The process of observing the results and modifying the contents of the SOP must never cease. If it is considered final, it will soon be out-of-date and a good source of confusion to those who must try to reconcile new orders with what the SOP directs. If a staff officer allows any SOP to become antiquated, he will be confronted by the "Big Three" of poor staff functioning, namely: order, counter-order, and disorder.

In addition to knowing how standing operating procedure is derived from experience, it is also essential to know the relationship between experience and standard texts, as sources for an SOP. With respect to field manuals, an SOP may amplify the principles into more detail, or it may in some cases revise parts of the manuals to coincide with

the lessons of battle experience. But an SOP must not merely duplicate a standard text, because nothing would be gained except more paper with writing on it. A rewritten field manual is still a rewritten field manual and not an SOP.

A staff officer will probably write many plans and orders in which he will want to refer to an SOP. He should do this wherever it is appropriate in order to keep his order brief and clear, but he should keep these points in mind: He must be sure there is an SOP on the subject, and the subject must be one which is properly included in an SOP. If, in writing his order, he refers to standing operating procedure merely to save time or to fill in where knowledge is lacking, the result will be confusion among those who read that order. The competent officer must know a good SOP when he sees one. After it is written and before it is distributed, the author should be able to answer these questions in the affirmative: "Does the SOP simplify my orders? Does it clarify my order? Does it promote teamwork and understanding? Does it reduce the possibility of errors? But, finally, if it reproduces existing manuals, it should be thrown out the window.

If its true meaning is understood and it is applied thoughtfully, the SOP will be an excellent tool. If, however, a standing operating procedure is allowed to become inaccurate or out-of-date, it will be the cause of the very things it was designated to eliminate, namely: confusion, errors and wasted time.

Blood Brakes Combat Blackout

PUTTING the brakes on blood circulation is science's practical solution to the problem of pilot blackout. To win the war, aircraft manufacturers produced better and faster planes. Soon these new powerful planes were taxing the pilot's skill and straining his physical resources beyond control.

Medical men learned that blackout was caused by too wide a variation from normal of the quantity and pressure of blood in the brain of the pilot. Our circulatory systems function properly with an adequate supply of blood to the brain under normal conditions, with normal forces such as gravity (1G) acting upon the body.

When the pilot goes into a power dive or outside loop and the plane suddenly starts downward, inertia makes his body tend to continue horizontally. He is held in place by the safety belt but his blood rises toward his head and increases blood pressure in the brain. The pilot sees red at first and then blacks out. The force, in the opposite direction to gravity, is called "negative acceleration" or minus G.

While in the dive, the pilot's body takes the new direction and the blood readjusts itself to normal. When he pulls out of the dive or goes into an in-

side loop, his body is forced down, the blood rushes toward his feet and the blood pressure in his brain decreases. He sees gray at first, then blacks out.

To measure these forces and determine the pilot's ability to withstand them, scientists use a "centrifuge," a machine resembling a large two-armed merry-go-round with a man-carrying cab on each arm. Special instruments record his reactions.

It has been found that a tense pilot or one who yells during the dive pull-out will not black out as quickly as a relaxed pilot. The average flyer can take more plus G than minus G. Usually a pilot blacks out at plus four or five G but his sight returns to normal almost immediately when the force is removed, and no harm results. For minus G, blackout occurs at about minus three G and can lead to serious brain or eye injury.

The discoveries led to the development of the G-Suit, which applies external pressure at different locations on the body and minimizes blood pressure disturbances. Inflatable "bladders" at the abdomen, thigh, and calves automatically inflate whenever the G force exceeds a certain point.—*Science Illustrated.*

First Cruise Training

By LtCol Robert D. Heinl, Jr.

Here is a suggested policy for duty rotation during a marine's first four years in the Corps.

NOW that peace has descended so abruptly, the Marine Corps is already at grips with the problem of reconversion, a problem (or set of problems) considerably magnified by the anticipated dimensions of the postwar Corps. A permanent establishment of 100,000 men, as is currently proposed, will present many posers to prewar personnel whose thinking had been pegged at about 20,000.

Nevertheless most thoughtful persons are agreed that the inherent, bedrock problem can be stated in a sentence: to raise the individual discipline and proficiency of the individual marine to prewar levels, while preserving the experience and lessons of combat, all this to be accomplished on a scale five times greater than before. Put even more succinctly, what we want to do is to turn out good marines—good by the magnificent combat standards of the wartime Corps, and good by the high individual standards of the old Corps in which “a rate each cruise” was solid going.

It is the thesis of this article that such a reconstruction if that is a proper name for it can be materially advanced by a long-term, uniform policy for the assignment and rotation of personnel during first enlistments. Similar policies, modified to suit cases, might likewise be applied to marines who elect to stay on in the peacetime Corps.

Why do we emphasize the importance of the first enlistment? The reason is that, with time on our side, we can afford to consider a marine's entire first cruise as no more than a postgraduate extension of recruit training. We can afford to forget the relentless speedup system of wartime, and we can thus get the most value out of a man's military formative period, which usually runs through his entire first enlistment. If the marine ships over at the end of his first four years, he then really begins his *professional* career; if he goes out, he will have had a sound, thorough and long apprenticeship which will make him for some years a valuable reserve and at least a potential source of strength to the Corps.

THIS latter consideration is of more importance than may appear, because the great percentage of loss due to failure to reenlist occurs after the first four years, and, in turn, a considerable number of the men who go out enroll in the inactive reserve. If, during his first enlistment, attention has been continually and exclusively focused on making our man a well-rounded, professionally competent marine, he is of far more value in the inactive reserve than if his four years have been spent in a lopsided, haphazard way. It is also a fair assumption

that an intelligently organized program for rotating and assigning men throughout their first enlistments would attract more reenlistments. Thus it would be all advantage if the Marine Corps could adopt a standard program, syllabus, curriculum—call it what you will—for every man to follow in prescribed sequence throughout his first cruise.

Translated into terms of *military experience*, the sequence of service which should produce the well-rounded “good marine” goes through three general phases. Recruit training, long, arduous and thorough, is the first. Fleet Marine Force experience is the next. Service in a ship's detachment or a large marine barracks is the last.

Since the beginning of the war, with its replacement training centers and 13 weeks' basic training, we have come to take standardized recruit training for granted. It should not be forgotten, however, that the Marine Corps for many years (even before World War I) pioneered the idea of the recruit depot and stood alone in employing this system when the Army was content to accept recruits at any post and give them such instruction as was locally convenient. And it was the relatively long and severe recruit training of prewar days which gave the marine so much of his edge. During the early days of the national emergency, we were forced to shorten boot camp, and speedup methods, particularly in weapons training, were necessary. Now, however, we have an unexcelled opportunity, not only to go back to prewar schedules, but even to increase them in length. In view of the increased number and complexity of basic weapons, and the need for precise performance by every marine in combat, a total of six months' recruit training might not be excessive. Of course, it should be divided into progressive stages: 12 weeks at recruit depot (the old familiar boot camp regimen and plenty of it); eight weeks of basic infantry combat training at Lejeune or Pendleton; and the remaining six weeks for more advanced infantry or specialized technical preparation of the recruit in the particular type of duty which he would initially be assigned, such as artillery, communications, engineer, tracked vehicles, aviation or sea school. After that kind of preparation, any recruit would be off to a proper start.

Immediately following his six months' recruit training, the first cruise marine should have at least two solid years in the Fleet Marine Force. For the majority of men, these years would of course be spent in rifle regiments. For some, with the necessary specialist training, the duty would be as ar-

tillerymen, field or base-defense; communicators, engineers, or any of the other *combat* specialties. At this time, a few would also be diverted to aviation duty. In two years, most men—assuming that much of the Fleet Marine Force will serve as overseas garrisons—would get foreign service, or at least two maneuvers, under their belts. During this period, also, they would be introduced to amphibious operations and receive the amphibious training which is the core of marine doctrine.

At the conclusion of this Fleet Marine Force tour, there would remain but 18 months of the four-year enlistment. These should be spent preferably at sea, or, as a substitute, on general duty at a large marine barracks. In both types of service particular emphasis falls on individual smartness, punctilious and intelligent performance of guard duty; in both the new man makes contact with the Navy. Such duty tends to polish a marine and—by setting him off against the Navy background—to heighten his consciousness of the responsibility and special status of marines.

Thus, from such a four-year program a well-rounded, experienced marine should result. There should, however, be certain fixed policies to make this first enlistment syllabus really effective. Foremost among these are:

(1) A general prohibition against *noncombatant* special duty assignments of any man serving in his first enlistment. That is, no first cruise man should be eligible for transfer to the quartermaster or paymaster branches, or to any *service*—as distinct from *combat*—unit of the FMF; he should be prohibited from serving as a post exchange or recreation attendant; and administrative policy should frown even on use of first enlistment clerks, property personnel, cooks, cobblers and barbers. This policy would be hard to enforce, but it would return rich dividends in military efficiency and readiness.

(2) Ironclad automatic rotation of first cruise men as herein recommended: six months' recruit training; 24 months in the Fleet Marine Force (or aviation units thereof); and 18 months at sea or in a marine barracks.

(3) No advancement beyond the rank of corporal until after completion of one enlistment. This policy might be extended to require a minimum of 18 months' service for appointment as private first class. Note, however, that by permitting promotion to the rank of corporal, this still allows men to qualify for commissioned rank during first enlistments.

TO support the foregoing policies, certain physical conditions and facilities must exist. Of these, the most important are strong, capably-staffed recruit depots. Parris Island and San Diego are the twin rocks on which the Marine Corps is built. The admirable advanced and specialist training facilities of Camps Lejeune and Pendleton are essential, not only for the final instruction of recruits but for year-round field exercise of such FMF units as are in the continental United States. Annual, full-scale amphibious maneuvers with the Fleet are taken for granted; without them the FMF would wither. The Marine Corps Schools should extend its activities, particularly in the form of up-to-date and attractive correspondence courses for enlisted personnel and junior officers. Throughout the Corps, even at the smallest posts, full use must be made of every training aid; indoor ranges and sub-caliber miniature firing devices must be in continual use; obstacle courses should maintain physical conditioning of all hands. Under such training conditions, first enlistment men, not to speak of the balance of the Corps, would be kept continually fit, continually active and continually learning.

Most important of all, however, there must be a particular attitude toward every marine on his first-cruise. Officers and NCOs should see that these men receive the best of training and indoctrination; they should attempt to discern every man's abilities and limitations and insure that the square pegs are fitted into the square holes. If the first enlistment is frankly recognized as being, in entirety, a period of training and testing, only then can the Marine Corps realize maximum benefit from the procedures we have put forward.

The Plan to Defend the Main Japanese Islands

IT is now known that Japan had completed extensive measures for home defense. She expected initial attacks about October, probably on Kyushu and Shikoku. The main attack, it was believed, would be launched during the winter 1945-46. Troops available for the proposed defense were: on Kyushu, an army of 16½ divisions; on Shikoku, four divisions; on west Honshu, 21½ divisions; in Tokyo vicinity, 17 divisions; on north Honshu, four divisions; on Hokkaido, four divisions;—a grand total of 48 divisions. American estimates were that including army and corps troops, services and depots, there were about 3,000,000 Japanese troops in the home islands; 4,000,000 were believed to be overseas, making in all a force of 7,000,000 to be demobilized.—*Field Artillery Journal*.

Withdrawal from the Yalu River

(Second in a series of two articles.)

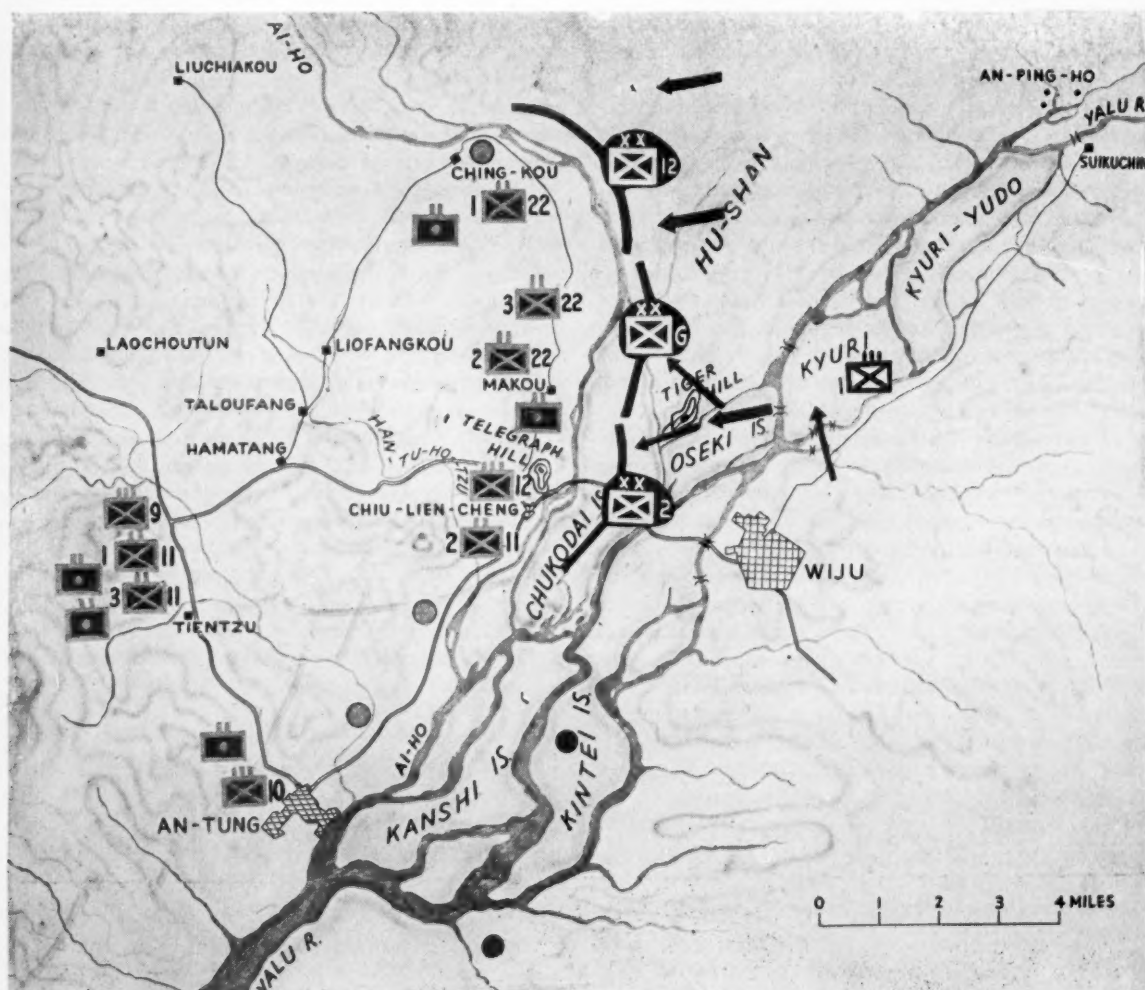
By LtCol Thomas J. Colley

ON THE night of 30 April—1 May, the Guards and 2d divisions of the Japanese First Army moved (via the route shown on Map 1) to positions as shown on Chukodai Island. All three divisions of the First Army, the Guards, 2nd and 12th, less the reserve left on Kyuri Island, attacked from these positions at 0700 on 1 May.

The Jap had planned and executed well. Rather than attack all along the front in equal strength, he had massed 29 battalions against the seven which defended the left flank. (The Russian units, organized as the Eastern Detachment, contained the 3d and 6th East Siberian Divisions and four regiments of Siberian Cossacks. Only the 11th and 12th

of the 3d Division and the 22d Infantry of the 6th Division were in position at Chiu-lien-cheng). More important, the Jap's dispositions were such that he could readily envelop that flank. The result was inevitable.

By 0900 all three divisions had crossed the Ai-ho in spite of heavy fire, and General Zasulich had given the order to withdraw from action and to retire upon Feng-huang-cheng. As soon as he had issued the order, since no rearward preparations had been made, he rode off the field towards Tientzu to organize the supporting echelon from the reserves there (the 9th Infantry and the 1st and 3d Battalions of the 11th Infantry, all of the 3d Divi-



Map 1: Jap units moved to these positions during the night and attacked on 1 May.

Synopsis

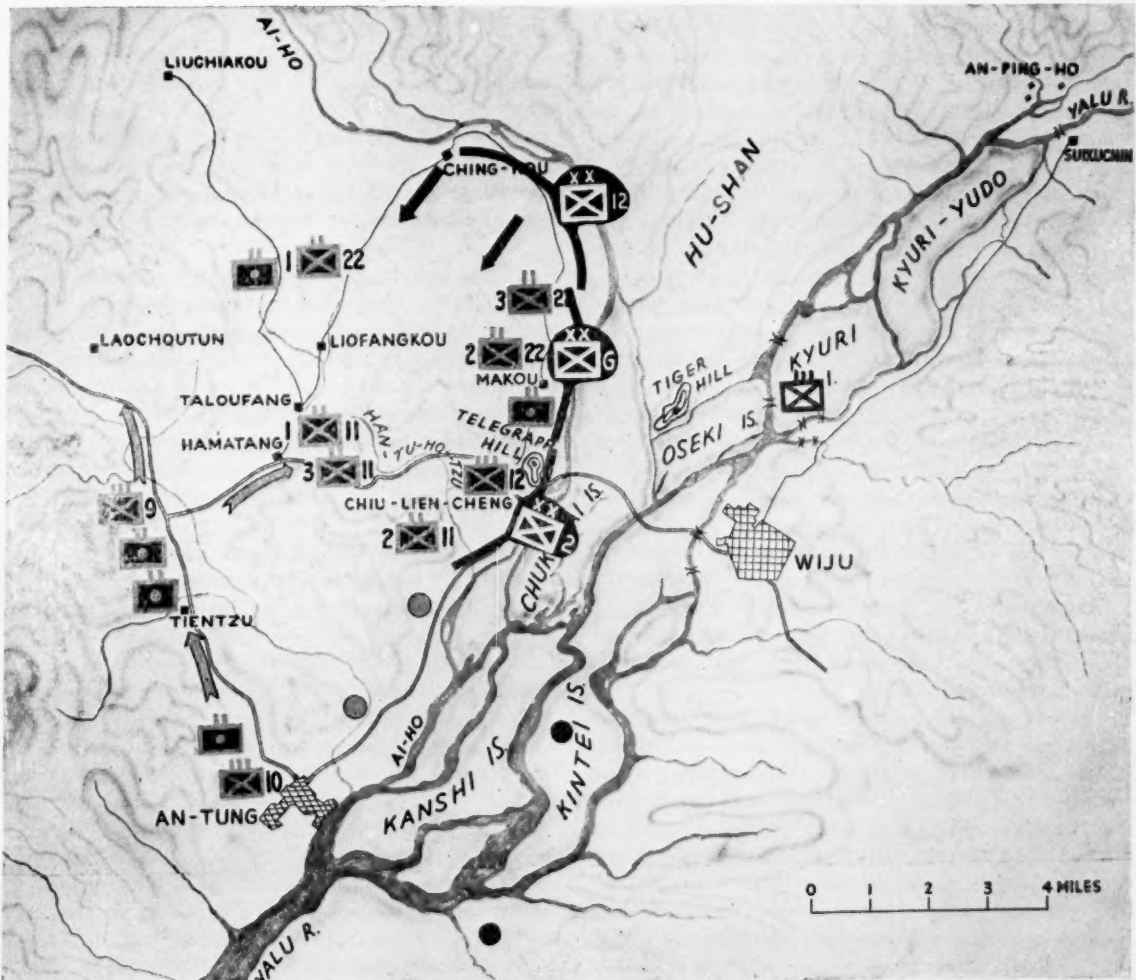
The first installment of Withdrawal from the Yalu, a study of retrograde movements against the background of the Russo-Japanese War, told how the Russian general, Zasulich, made his most fateful decision. The Japanese had landed and had secured Korea, seized islands in the Yalu River, boundary line between Korea and Manchuria, forced crossings of the river and occupied Tiger Hill, a key observation point. Zasulich's staff officers advised retirement to a secondary delaying position. Disregarding their counsel, he thus accepts what may be a decisive battle. He knows that the Japs possess a superior force, that his own force is disposed for a wide mobile delaying action. Nevertheless, he decides to use this disposition for a determined defense at the Yalu River.

sion). Thus the benefits of prior planning appear to have been denied the hapless troops!

At this most critical time, his action denied the troops another benefit—his personal presence. Paragraph 680* states in part: "... the presence of higher commanders well forward will tend to counteract the detrimental effects of this type of action."

The problem of extricating the engaged troops from this dangerous situation was now Major General Kashtalinski's. With a late start, he was now expected to forge success out of that most difficult operation—a daylight withdrawal from action. Fortunately he was an energetic officer, well grounded in tactics. It was as if he had just read the first sentence of Paragraph 694*: "It is best usually to withdraw the least heavily engaged units first." He did just that, withdrawing his right flank element, the 2d Battalion, 11th Infantry, to a covering position on the west bank of the Han-tu-ho-tzu, where it was beyond observation of the Japanese artillery on the islands and could cover the withdrawal of other elements, by flanking fires (see Map 2).

At 0930 General Zasulich released part of his



Map 2: Russians started the withdrawal as the Japs forced a crossing of the Ai-ho.

general reserve near Tien-tzu—the 1st and 3d Battalions of the 11th Infantry—to the assistance of the center sector. Kashtalinski, with excellent tactical perception, ordered them to a covering position just east of Ha-ma-tang. Here the main road to the rear passed through a defile between two ridges. The covering detachment went into position on the eastern crest, facing generally northward and eastward (see Map 2).

The remaining general reserves and the right sector garrison at An-tung retired at Zasulich's order at 0930. They moved back in a more or less orderly manner and eventually took up a secondary main delaying position at Lao-chou-tun at 1500. We now see the scheme of withdrawal resolving itself in the heat of battle, utilizing two successive covering positions to regain freedom of action (one at the Han-tu-ho-tzu and one at Ha-ma-tang), with a secondary delaying position planned at Lao-chou-tun. So far so good.

BUT let us look at the situation where the pressure was greatest—on the left flank regiment, where Colonel Gromov's 22d Infantry was facing the irresistible odds of the 12th and Guards Divisions, and as yet in the dark as to his commander's intention or plan for withdrawal. At about 0900, he, too decided to order a withdrawal in order to retire upon Liu-chia-kou. Immediately thereafter, however, he found that his 1st Battalion, protecting the fords at Ching-kou, had been driven westward by elements of the 12th Division, and that the latter had pursued, cutting off his route of retirement. Gromov was by now isolated, without communication, having no cavalry with which to gain contact rapidly, and without any idea of the commander's latest orders. It appeared that his regiment would soon be overwhelmed. He broke contact without great difficulty and ordered a retirement directly west over the hills via Ta-lou-fang to the main road (see Map 2). Communications being out, his move was not reported to Kashtalinski, the sector commander.

What Col Gromov could not know at this time was that by so retiring, his force uncovered to the envelopment of the 12th Division the flank of the covering position on the hills east of Ha-ma-tang, on which the entire success of the hastily organized withdrawal depended!

The obvious and basic weakness of the situation at this point—that of the uncoordinated withdrawal of Col Gromov's Force—can be laid at the door of the Eastern Detachment's commander, General Zasulich, who failed to *plan* a withdrawal from action (or better, a retirement the night before) to a secondary delaying position early enough so that all subordinates could understand his scheme, and thereby coordinate their actions in this, one of the most difficult types of operation.

At the same time, Col Gromov was definitely at fault in ordering a withdrawal of his own force at

this time, remembering that his last order from competent authority was (not) to abandon (his) positions under any pretext whatsoever.

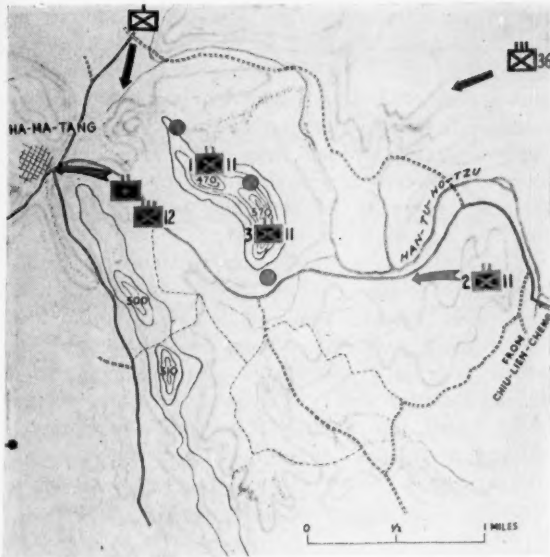
Paragraph 640* states in part: "A unit entrusted with the defense of tactical locality *under no circumstances* abandons it unless authorized to do so by higher authority." Hopeless as Gromov's situation was, he had been committed to the defense, and he was therefore technically guilty of failure to obey orders. As it turned out, it is doubtful whether continued resistance by his regiment would have made the battle any more of a success. He probably would have incurred as many, or more, losses by holding his position than the covering force and main body eventually did as a result of his uncoordinated withdrawal. (Paragraph 708* states: "No commander is authorized to order a retirement on his own initiative simply because of local misfortune. . . .")

Fortunately for the Russians, the Japanese 2d and Guards Divisions now halted upon reaching their primary objectives—the high ground just west of the Ai-Ho. All efforts to make these units pursue the withdrawing Russians were unavailing. The Jap 12th Division, tired by its long enveloping march, nonetheless kept grinding slowly southward (see Map 2). At 1130 First Army's General Kuroki ordered the pursuit to be taken up by the Guards and his reserve, toward Ha-ma-tang, and ordered the 2d Division to move southward against An-tung. For various reasons which we shall not go into, these moves did not commence until 1400.

Thanks to this tardiness in commencing the pursuit, the belated Russian efforts to organize a withdrawal bore some fruit. To recapitulate, the right sector forces (from An-tung) and the uncommitted portion of the reserve retired safely toward Lao-chou-tun; the major portion of Kashtalinski's sector garrison managed to break contact and retired under pressure through the defile at Ha-ma-tang, covered by the force on the hills east thereof; Gromov's regiment withdrew westward.

THE covering position on the Han-tu-ho-tzu, while neither far enough to the rear for a good secondary delaying position, nor on suitably commanding ground to cover fully the withdrawal on Kashtalinski's front, was advantageously placed on a flank and had thus far aided his withdrawal. However, his forward elements suffered heavy casualties in making the initial break, when they had to retire in disorder up and over the crest of Telegraph Hill and the barren ridges on which they were disposed, in plain view of the attackers, fighting as they went.

In this action, one Russian company of the 12th Infantry stationed on Telegraph Hill came to glory when it counter-attacked the oncoming Japanese with the bayonet and was destroyed. The counter-attack was made in a desperate attempt to aid the withdrawal of nearby hard-pressed units, including a battery of artillery. Paragraph 694* visualizes



Map 3: Initial action of the covering force.

this type of action in these words: "... In some situations, counter-attack may make it possible to withdraw first those units which are hardest pressed. . . ."

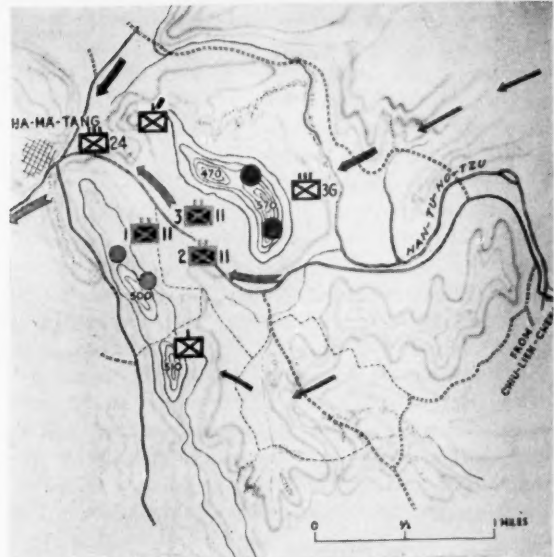
The Guards Division had finally begun the pursuit by 1400. The 2d Division was held up for some time in its move toward An-tung by machine guns in the Han-tu-ho-tzu position, which delivered flank fire (see Map 2).

But now the 12th Division, approaching from the north, was threatening seriously the north flank of the pivotal Ha-ma-tang covering position. Let us see what happened here, at the critical point of the operation (see Map 3).

The 1st and 3d Battalions of the 11th Infantry, from the general reserve, were disposed on Hills 470 and 570, which with Razor-back Ridge (Hills 500 and 510) formed the defile through which the road to Ha-ma-tang passed.

At 1400, the leading company of the 24th Infantry, Japanese 12th Division, closed rapidly on Ha-ma-tang from the north and engaged the exposed north flank of the covering position. Although this company lost heavily, it captured the northwestern end of Hill 470 and forced the Russians to counter-attack to secure their rear. The Russians being thus engaged, the advance elements of the Guards Division were able to move toward Hill 570 from the east.

At about 1500, as the Russian rear guard (the 2d Battalion, 11th Infantry, formerly in covering position along the Han-tu-ho-tzu) entered the defile, elements of the Guards Division struck Hill 570 from the east, but the defenders held on grimly. Seeing their exit cut off by the action on Hill 470 near Ha-ma-tang, the rear guard joined forces with the beleaguered covering force.



Map 4: The sacrifice of the covering force.

By 1600 the Japs had turned the right flank by sending the 10th Company of the 4th Guards to attack northwestward up the length of Razor-back Ridge (see Map 4). Elements of the Russian force on Hill 570 fell back across the defile and climbed up on Razor-back to counter this threat to their rear. This move was not enough, for by now the main Russian position on 570 was subject to both frontal fire and fire from the 10th Company of the 4th Guards on Razor-back Ridge. A renewed frontal attack dislodged this main force, forcing them to withdraw to the ravine, and allowing the 3d Guards Regiment to occupy Hill 570. All the 24th Infantry had by now closed on its leading company, near Ha-ma-tang.

Thus, by 1640, all the hills surrounding the covering force were occupied by the Japanese, but from the northern end of Razor-back Ridge and in the defile itself, the gallant covering force continued to resist, outnumbered overwhelmingly (see Map 4).

Realizing the necessity for holding out as long as possible, Colonel Laiming, the covering force commander, organized a final counter-attack by two battalions of the 11th Infantry to gain time for the retirement of the main body, and to make a last bold attempt to break through the Jap 24th Infantry in an effort to save his own force. In this attack, Col Laiming and nearly all of the 3d Battalion, 11th, fell. The shattered remnants of the force later surrendered, at 1710, but not until the bulk of the Eastern Detachment had safely broken contact.

Provision for this bitter eventuality when conducting a withdrawal from action is found in Paragraph 694*, which states in part: "... when necessary to protect the command as a whole, . . . hard-pressed units must stay to the last. It is better to

run the risk of losing certain units than to jeopardize the whole command."

Later, at Lao-chou-tun, elements of the An-tung garrison which had already arrived on the next rearward delaying position there stopped further pursuit by the 23d Brigade of the 12th Division without a serious fight.

Thus the withdrawal and retirement of the bulk of General Zasulich's Eastern Detachment was completed with a degree of success not deserved by his faulty generalship, but earned at great cost by certain of his troops and lower commanders. Casualties were heavy, and 21 field guns and much more equipment were lost. The whole force was so badly disorganized that it retreated 60 of the precious 120 miles before offering resistance again. Greatest loss, however, was in the morale of the Manchurian Army, which was never regained through a series of later defeats culminating in the

loss of the campaign. The prestige of the white man in Asia was for the first time severely shaken, by a defeat which need not have happened. Perhaps a more smartly conducted delaying action by General Zasulich, allowing full assembly of the Russian armies at Liao-Yang and their later successful use, might have maintained the white man's prestige for many more years, curbing Japan's dream of empire.

It is well to reiterate in closing that retrograde movements, which may be classed as retirements, withdrawals from action, and delaying actions, are difficult but sometimes necessary operations in which morale and control are easily lost unless commanders utilize their staffs to make careful and timely plans based on sound tactical doctrine, quickly reorganize units so as to maintain strict control, and then show themselves well forward to prove to lower echelons that everything is under control.

Tentative Corps' Rules on Commissions

TENTATIVE regulations have been drawn up for the transfer of Reserve and temporary officers of the Regular Marine Corps.

Legislation authorizing transfer still awaits enactment and the implementing regulations must remain in a tentative status until such time, but it is believed that the following summary covers the regulations which will be placed in force upon enactment of the bill, at least as far as eligibility, rank and lineal position are concerned.

Under the new regulations applications for transfer, which were previously limited to persons on active duty, may be submitted by officers who have gone on or who later go on active duty. Former officers who have been or who later may be discharged may also make application, provided their applications are received within six months of release or separation, whichever is earlier.

It is emphasized that early submission of applications is an important factor, as after passage of the law and adoption of the new regulations the first selection board to meet may obtain the requisite number of officers from applications then at hand leaving few vacancies for later applicants to fill. A Reserve or temporary officer accepting a Regular commission or appointment is not irrevocably committed to a career in the Regular Marine Corps as he may resign subject to the pleasure of the President. In addition, all resignations from transferred officers received by 1 Jan., 1947, and which have not already been accepted will automatically be accepted on that date.

Applications are necessary from:

1. Reserve commissioned officers regardless of their permanent reserve status, for permanent regular commission.

2. Temporary commissioned officers (regulars whose permanent status is commissioned warrant, warrant or enlisted), for permanent regular commission.

3. Commissioned reserve warrant officers regardless of permanent status, for permanent regular warrant.

4. Temporary commissioned warrant officers (regulars whose permanent status is warrant or enlisted), for permanent regular commissioned warrant.

5. Reserve warrant officers regardless of permanent reserve status, for permanent regular warrant.

6. Temporary warrant officers (regulars whose permanent status is enlisted), for permanent regular warrant.

Those in the first two categories may apply for permanent regular commissioned officer status if desired.

There are no age requirements for an officer of the rank of lieutenant colonel or above. An officer of the rank of major or below will be certain to satisfy the age requirements if on 1 Jan., 1945, he had not attained the age of 27. If over that age on 1 Jan., 1945, officers are still eligible if they have not attained the age shown below opposite the rank and date of rank in which they are now serving.

Major	— 9-8-39 to 5-5-43	32
	5-6-43 to present	31
Capt	— 9-8-39 to 5-30-43	31
	5-31-43 to present	30
1st Lt	— 9-8-39 to 1-30-44	30
	1-31-44 to 4-29-45	29
	4-30-45 to present	28
2nd Lt	— 9-8-39 to 6-5-45	28
	6-6-45 to present	27

Military Aspects of Mental Disease

Second of three articles on the neuropsychiatric problem in the Marine Corps.

By LtComdr Philip Solomon, (MC)USNR

In the November GAZETTE, the importance of the neuropsychiatric (NP) problem in the Marine Corps was discussed. The subject of mental health was then taken up, both for its own sake as a valuable element in military efficiency, and for its effect as a preventive factor in the development of mental disease. This article will attempt to give the marine officer an understanding of the military aspects of the more common NP diseases. It should be made clear that it is not the intention to make an NP expert of every officer, but, just as it is wise for the officer to have better than the average layman's knowledge of physical wounds and their emergency treatment, it is wise for him to have a good practical grasp of certain NP disorders in the military setting.

THE term "disease" must not be thought of as comprising only such insidious entities as tuberculosis, syphilis and the like. Disease in the physical sphere covers such symptoms as headache, indigestion and exhaustion; similarly, in the mental sphere, many relatively minor conditions are included. For the sake of simplicity, this subject will be divided into two categories: *impersonal diseases* involving physical injury to the nervous system, or individual difficulties as, for example, speech disorder, and *personal diseases* involving the individual as a whole, as, for example, personality disorders.

Impersonal Diseases

1. *Injuries to the nervous system* such as a fractured skull, gunshot wounds of the brain, spinal cord injuries and injuries to the nerves in the extremities are serious conditions but primarily the concern of the surgeon and neuro-surgeon. There are two aftermaths of injury to the nervous system, however, that are insufficiently known. *Post-traumatic syndrome* is the term used to describe a condition sometimes seen after a head injury (or "trauma"), in which the individual suffers continual headaches and often personality changes, such as irritability, emotional instability or memory disturbances. *Subdural hematoma*, or "clot on the brain," may not make itself known until weeks or

even months after an individual has supposedly recovered from a head injury. The symptoms may be the same as those in post-traumatic syndrome but they are often progressively more severe and may involve difficulty in concentration or thinking properly and perhaps attacks of unconsciousness or paralysis of an extremity. Obviously, medical attention should be sought as soon as possible for either of these disorders.

2. *Infections of the nervous system*, such as *meningitis* (brain fever) or *encephalitis* (sleeping sickness), are serious. Here again, these are the primary concern of medical men. However, it is worth noting that meningitis is contagious and often occurs in epidemics in military life. Its early symptoms are usually terrific headache, fever, stiff neck and delirium. Its spread can be prevented by scrupulous isolation and by the administration of sulfa drugs, under medical direction, to all men of the outfit involved. Encephalitis fortunately is rare, but it also may occur in epidemics in certain parts of the world. The symptoms are fever, prolonged sleep or coma, and sometimes peculiarities in behavior. Serious after-effects may occur.

3. *Mental Deficiency*—The lack of education is not feeble-mindedness. Many men who cannot read or write because they never had an opportunity to go to school have done well in military life. But the true feeble-minded individual, who does not have the normal capacity to learn, does not belong in military service. Fortunately, most of such persons are eliminated before they go far in the Marine Corps. Occasionally one remains undetected for some time, especially if he is near the borderline in intelligence. Such a man may do all right so long as he is kept at such assignments as digging heads or unloading trucks, but the demands of combat in the line are beyond him. The fighting marine must be a skilled technician, able to cope with the complex machinery of modern warfare.

The mentally deficient individual is not only of no value in combat, he may actually be a serious hazard for the normal men in his outfit. Frequently, in addition, he becomes emotionally upset at his own inadequacies and either breaks down nervously or turns into a disciplinary problem because of unwitting misconduct. The following is a typical example:

Case 1—At an advanced training base, a 20-year-old marine private was referred to the psychiatrist

after his third disciplinary offense. At boot camp he had lost his temper and sworn at a drill sergeant. At his next station, another marine persuaded him to go AWOL. At the advanced training base he was accused of the unauthorized use of a vehicle which he had wrecked. He had been told that he would accompany an NCO on the truck, but he misunderstood his instructions and started out by himself.

On examination, the patient gave a history of having left school in the sixth grade at the age of 16 without ever having learned to read or write. "They just pushed me along because I was so big." He tried several jobs but was usually fired in a short time for incompetence. As a truck-driver he was arrested several times for traffic offenses. On entry in the Marine Corps he managed to conceal his illiteracy. On psychometric testing he was clearly feeble-minded, rating as a "high-grade moron." He was discharged from the service.

4. *Epilepsy*—The tendency to fits is far more common than is generally recognized. Fits may be major (grand mal) or minor (petit mal). In the former there may be a sudden outcry without warning, followed by a fall to the ground, unconsciousness, and a convulsion (a stiffening of the whole body, then spasmodic jerking of the head and limbs). There may be frothing at the mouth, biting of the tongue and involuntary urination or defecation.

The emergency treatment is to let the patient alone as long as he is not hurting himself. If he turns blue for more than a minute, his jaws should be pried open, preferably with a stick wrapped in a handkerchief, and his tongue pulled out. Don't shove things like metal spoons into his mouth; many teeth have been broken unnecessarily in this way. And keep calm. The attack looks terrible, but almost invariably it is over in a few minutes, leaving the patient worn out and perhaps a bit confused, but otherwise all right.

The minor attacks are usually momentary lapses of consciousness without falling, and may occur many times a day. There is a brief flutter of the eyelids, the patient misses a word or two you have been saying, and he is normal again. Many patients have had these attacks for years without realizing their significance.

The importance of epilepsy in military life is obvious. An attack at a critical moment may not only endanger the life of the patient, but of his buddies as well. An epileptic aboard ship once fell into an ammunition hoist and threw the whole turret out of action. Though the majority of epileptics would make excellent workers at many jobs (clerks, storekeepers, laborers), present regulations disqualify them entirely for military service. Many epileptics have been known to conceal their condition and succeed in entering the service. When this becomes known, they should be reported immediately to the medical officer.

5. *Migraine*, a type of recurrent headache, is by no means rare, and strangely enough, is particularly common among the better educated. Attacks may occur once a week, month or year, or irregularly. They may last an hour, or two or three days. Sometimes they are inaugurated by peculiar temporary visual disturbances (spots, blurs, colored lights or blindness) and usually are accompanied by severe headache (often one-sided), nausea, vomiting and prostration. The disorder may run in families. In mild cases, there is no interference with military effectiveness. If the visual symptoms are severe, however, or if the attacks are frequent or incapacitating the patient must be disqualified for military service.

6. *Somnambulism* or sleepwalking is common in childhood, but is usually outgrown in adult life. When it occurs in a military man, it may be a sign of nervousness or it may be an inherited family trait without explanation. Since attacks tend to occur under conditions of stress, they may be a serious problem aboard ship (where one cannot walk far safely) or in combat (where at night one often cannot walk at all safely). Sleepwalkers should not be protected by their buddies, as is too often the case, but should be reported at once to the medical officer. The following example is of interest:

Case 2—A 19-year-old marine PFC was referred to the psychiatrist at the end of the third week of a combat operation. In the front lines he had been having night terrors in which he would yell such things as "Look out! Here they come!" Once mistaking his foxhole buddy for a Jap, he attacked him and had to be restrained with the help of several others. Another time, in apparent terror, he leaped out and ran forward screaming. He drew fire from the enemy and in getting him back to his foxhole two of his buddies were wounded. He was turned in by his lieutenant the next morning. He had been a sleepwalker all his life and his father and one brother were similarly afflicted.

7. *Enuresis* or bedwetting, which is universal in infancy, may persist in adult life because of an in-born defect in the urinary apparatus, or because of nervousness or personality disorder. When it cannot be corrected, it becomes a sanitary nuisance and source of ridicule in military life. All instances should be reported to the medical officer, but precautions should be taken against the occasional faker who is trying to get out of the service.

8. *Narcolepsy* (abnormal attacks of sleep) is a peculiar condition which is rare except in Negroes. Afflicted individuals may be seized by an attack of involuntary sleep at any time (driving a car, walking a post, even eating or talking). They also may have attacks of sudden weakness and collapse on surprise or pleasant emotion. (One unfortunate had such an attack when he drew four aces in a poker game; sad to relate his cards fell face up!) In military life, several cases of falling asleep while standing guard have been shown to be due to narco-

lepsy. All suspected cases should be referred for a medical opinion.

9. *Speech disorders* such as severe stammering or other pronounced speech defects render an individual unable to transmit a verbal message and thus may be serious in combat. Afflicted persons also may be the subject of embarrassment or ridicule. They should not be permitted in military service.

10. *Miscellaneous conditions*, including a great many obscure and rare organic diseases of the nervous system, have been known to occur in military life. Mere mention may be made of a few. On one military operation, the author saw two cases of early *brain tumor* (increasing headache, convulsions, loss of vision) and several cases of *facial paralysis* (following exposure to cold wind). The first of these requires immediate surgery, the second requires protection of the eye on the involved side (since eyelid cannot be closed). *Neuralgias* or *neuritis* may occur in various parts of the body, causing pain and sometimes loss of sensation or muscle weakness. A *tic*, or involuntary facial twitch or mannerism may come on because of fatigue; nervousness, or for no known reason. Peculiarities of thinking or behavior may turn out to be due to one or another of many additional diseases of the nervous system (some caused by syphilis, arteriosclerosis or high blood pressure). Not uncommonly, malaria may be the offender when it affects the brain.

Personal Diseases

1. "*Psychosis*" is the medical term for what laymen call "insanity." The man with a psychosis of any kind is seriously sick mentally and should be put in a hospital as soon as possible. Not only does he need treatment at the earliest moment, but he is a definite hazard because of the chances of suicide, homicide, or other dangerous behavior.

Dementia praecox, or "schizophrenia," is a disease which occurs usually in the second or third decades in life. Many recruits with it are weeded out at the induction station or training station, but new or previously unrecognized cases continually crop up later on. The following is a typical case:

Case 3—A 26-year-old marine sergeant had been in the service for three years and was in his fourth operation. For several weeks before leaving the advanced base he had been unusually quiet and avoided his friends. His usual efficiency handling quartermaster gear fell off and he made a number of serious blunders. Once a guard found him late at night sitting on the beach with no clothing on, talking and laughing to himself in a strange manner. He explained that he couldn't sleep. On the operation, his work continued to be erratic and he became even more seclusive and shut in.

One day he disappeared and was found several days later living in a cave in filth and squalor. He mumbled that he just wanted "to be let alone." He was suspicious of those about him and looked dazed

and bewildered. He was found to have a relatively advanced stage of *dementia praecox*, had been hearing voices for some time and had developed delusions of being persecuted. He was hospitalized at once.

Manic-depressive disorder is a term applied to individuals who have more than the average swing from low spirits to high spirits. In their "lows," they may become so depressed that they cry and imagine all sorts of derogatory things about themselves, and may refuse even to eat or move around. Sometimes they attempt suicide. If they have "highs," which are not so common, they may bustle about in terrific activity, being full of ideas (most of them "wild"), talking or writing endlessly (often gibberish), feeling wonderful ("I'm sitting on top of the cock-eyed world!"), and needing almost no sleep. In mild forms ("hypo-manic"), they may get a lot of useful work done, but usually they soon run into trouble, and may have to be put in restraints.

Case 4—A marine second lieutenant was seen in his first military operation. He had led his platoon in a patrol assignment through the mountains, was ambushed twice, and lost several men before help could get to him. He became increasingly active and daring from this point on, exposed himself recklessly to enemy fire and single-handedly wiped out a machine gun nest. He stayed awake most of the night walking about with the sentries or by himself. He talked sensibly, but began to make extravagant claims, and laughed a good deal in uproarious good humor. He insisted he had killed a Jap admiral and 40 men. He wanted to keep constantly on the move and argued a bit incoherently, though good-naturedly, with his superiors.

When he reached the psychiatrist he insisted he had just returned from Tokyo and that there was nothing the matter with him—he felt wonderful. He had had a similar episode at college four years before and had been hospitalized for several months. His mother had also been hospitalized several times for severe depressions. He concealed this history on entering the Marine Corps.

Reactive depression refers to a depressed state similar to the "low" state described above, but due to a known cause against which the individual is reacting. (For example, a man gets a letter that his fiancée has married another, or, after two years overseas he learns that his wife is about to have a baby.) It is normal to become depressed under some circumstances, but within limits. It is not normal to cry constantly, have prolonged incapacity for work, or attempt suicide.

Combat psychosis is a name, not yet in general use, which refers to any acute psychotic reaction which is precipitated by actual combat. The clinical picture may be schizophrenic, manic, depressed, or any of these or others in combination. The afflicted individual may be in a "fog," wander aimlessly about, run wildly into exposed areas, or otherwise endanger his own life or those of his comrades.

Other combat nervous disorders will be discussed in Part III of this series.

Other psychotic states occur rarely in military life. *Delirium* may accompany any high fever, particularly in malaria. A late form of syphilis (which may occur years after the original infection, perhaps in individuals who have been inadequately treated and consider themselves cured) may produce *general paresis*, with physical, mental, and moral disintegration, and occasionally ideas of grandeur ("I'm the ruler of the universe," "I can do anything!"). Psychosis may occur in *chronic alcoholism*, in *brain disease* due to hardening of the arteries (*arteriosclerosis*), or high blood pressure (*hypertension*), or *senility*, or unknown causes (*unclassified*).

2. "*Psychoneurosis*" is the technical term for the well-known "nervous breakdown," or for "nervousness" in its various forms. It has been said that the most charming people are the neurotics. Be that as it may, it is probably true that most of us have a certain amount of nervousness in one form or another. If the symptoms are severe enough to warrant medical attention or to be incapacitating for work, they may be said to constitute a *psychoneurosis* (or more simply, "neurosis"). It is fundamental in the diagnosis that the symptoms be primarily emotional in origin and not due to organic or physical disease.

THERE are various types of psychoneurosis depending on the predominant symptom. In the *anxiety* type, such symptoms as panicky feelings, apprehensiveness, headache, rapid heart beat, difficult breathing, loss of appetite, frequency of urination, diarrhea, insomnia and lack of energy are prominent. In *hysteria*, there may be apparent paralysis, or loss of feeling in one or more extremities, apparent deafness, blindness or loss of voice, night terrors, sleepwalking, bedwetting, stomach trouble, pains or aches anywhere in the body, or spells of apparent fainting, amnesia (loss of memory), or other peculiar behavior. The *compulsive-obsessive* type is characterized by compulsions (washing the hands over and over again throughout the day, or counting everything—stairs, pickets, windows, or certain elaborate rituals before going to bed) and by obsessions ("phobias," such as fear of water, high, closed-in or open places; constant thinking of imagined illness, such as cancer, tuberculosis, or syphilis; abnormally strict dietary habits). *Mixed* types, in which any of the above symptoms may occur together, are most common. It can be seen that almost every symptom known to man may be present in a psychoneurosis!

It is a familiar observation that people differ in their tendency toward nervousness. Horses, dogs, and other animals differ in this way also. Hereditary factors seem to be involved (whole families are sometimes nervous, and witness the thoroughbred

horse), as well as environmental precipitating conditions (the stresses and strains of life).

Some people seem to be born with a neurotic temperament, with such traits as easy excitability, emotional instability or marked sensitivity. Such individuals take very little to make them develop a neurosis. They usually do not last long in military life, since they are weeded out in draft boards, induction stations and boot camps. Of the few who get through as far as combat, some break at once. Others carry on surprisingly well (perhaps because they can handle real dangers better than their own personal inner dangers). Other people show an amazing ability to bear up without neurosis under the most trying situations and frustrations. Those cases that do break down under the extreme stresses of combat will be dealt with in part III of this series.

Speaking generally it is obvious that the neurotic is not a desirable person in military life. He clutters up the sick bays, often developing one symptom after another. He cannot be helped by ordinary medical means and he annoys his comrades and officers with his constant complaints. It is a serious mistake, however, to bear such an individual in contempt or to consider him a faker. His symptoms are just as real and distressing to him as though they were caused by actual physical disease. The best procedure is get him out of the service as quickly as possible. There is no need to be greatly concerned about the true malingerers (fakers). These are rare, and the medical officer (who is as eager to detect them as the line officer) can usually spot them quickly.

Also obvious is the fact that the less neurotic an individual is the better fitted he is for combat. Ideally, only the most stable would be put into the front lines. Unfortunately, there is at present no good way of determining beforehand who the men are who can best withstand combat. Attempts have been made (psychological tests, personality inventories—questionnaires, ink blot tests—"Rohrschach," psychiatric interviews) but none has been demonstrated to be sufficiently reliable as yet to be used in such a practical way. We must remain with the dictum that the best test for competency in combat is combat itself.

3. *Psychopathic personality*: Men's personalities differ as widely as their personal appearances. The range of normal is great and encompasses innumerable types, forms and varieties. We all have our peculiarities and eccentricities, and much of the color and spice of human relationship is due to these very differences. Beyond a certain point, however, the vagaries of personality become so extreme that they must be labeled abnormal. The term "psychopathic personality" or "personality disorder" is then applied.

The amount of abnormality in personality which society will tolerate in an individual depends upon the type of life the individual is living. On a ranch or farm he can be almost as unusual as he likes.

The same is often true if he is rich enough. But the employe in a large factory and the man in military life have to live pretty close to the line. In military life, particularly, there is a necessary premium on standard behavior and conformity. The too colorful or individualistic person is apt to get into trouble. The true psychopath is sure to. The following case histories will describe the most common forms of psychopathic personality seen in military life:

Case 5—A 26-year-old marine private was referred for psychiatric examination. This marine had been in the service over two years and had been in constant trouble. He was seven days AWOL after his boot furlough. A month later he went AWOL for 29 days, persuading a younger man to go with him. Two weeks after he got out of the brig he was picked up for taking part in a drunken brawl. A week before his outfit was to shove off for overseas duty, he was hospitalized for gonorrhea. He was listed as missing from the hospital for two days. Three months later, he got into an argument with his platoon sergeant, blows were exchanged, and the patient attempted to go after the sergeant with his bayonet.

The past history was one of bad background and continuous anti-social behavior. The parents had been divorced because of the father's alcoholism and brutality. An older brother was currently serving a jail sentence for armed robbery. A paternal uncle was in a mental institution. At school the patient had been a serious problem because of truancy and incorrigible behavior. He was expelled on three occasions. At 16, after several minor delinquencies, he was caught breaking into a gas station. Because of the intervention of his mother and an influential maternal uncle, he got off with probation. At 17 he ran away from home, tried various jobs but was fired from most of them because he couldn't get along with his boss or fellow workers. He was jailed in two states for vagrancy, and three times for drunkenness. At 20 he was caught robbing a liquor store and served a six-month sentence. At 22 he was forced to marry a girl he had made pregnant. His marital life was stormy and he was in court several times for non-support, drunkenness, and physical abuse. The SPCC was called in once about maltreatment of the child. The patient then deserted his family and enlisted in the Marine Corps in another state, falsifying his papers.

On examination, the patient was hostile, belligerent, and insisted he was being railroaded for an incident that was the sergeant's fault. His attitudes were rigid, he was clearly egotistical to an abnormal degree and was adjudged to be unable, by virtue of his personality defects, to conform to authority or profit from his experiences in a normal way. When his sentence was served, he was given a BCD from the service.

This type of individual is obviously undesirable for military duty. It is fallacious to argue that

the service may straighten him out. The Marine Corps is not a corrective or therapeutic institution. Occasionally in combat an individual of this sort does run blindly into the face of apparent disaster and becomes a hero, but for every one of these there are apt to be a hundred who are more trouble than they are worth, who interfere with discipline, corrupt others and waste the time of officers in courts-martial.

Case 6—An 18-year-old recruit had been homesick from the day he left home. He stayed awake nights crying and in the daytime he was listless and unable to keep up with the others in training. He ate very little and lost weight. One hot day he fainted on the drill field and was brought to sick bay. On examination, he was found to be normal physically, but extremely immature in his manner. He was an only child and had been pampered at home. He had been a bed-wetter up to the age of 15. He had never been away from home before. Attempts were made by the psychiatrist and others to help him to overcome his difficulties and adjust to service life, but the boy did not improve. It was decided that his personality was inadequate for military duty and he was discharged via the aptitude board.

Some overprotected young men seem to develop and mature rapidly when they leave home and join the service. Others are still in such an early stage of adolescence that they are hopeless. Though this condition is seen more commonly in the younger recruits it may be present in the twenties and even later. Some people grow up very slowly. Some never do.

Case 7—A 19-year-old private was seen at sick bay at an advanced training base. With some difficulty he managed to get through boot camp and a field telephone school, but preparations for going overseas apparently were too much for him. He became highly upset at each prophylactic inoculation and fainted at most of them. In the combat course with live ammunition he could not be persuaded to go forward. He would not climb the tower at the pool for abandon ship drill. Each time he broke down and cried. Finally, at the scene of a minor accident, he was shocked by the sight of blood and fainted away. He was considered to be emotionally unstable to an abnormal degree and was hospitalized for medical survey.

Case 8—A 29-year-old corporal was referred to the psychiatrist by his commanding officer at an overseas training base. The man had been a source of trouble even since he entered the service. He had been a lawyer in civilian life. He attributed his failure to get a commission to "political influence." After many squabbles with his draft board he had been inducted into the Marine Corps, much against his will. He felt he could get further with his talents in the Navy.

At boot camp and in later training he constantly

criticized his drill sergeants and officers, offering many suggestions for the supposed improvement of the routine and arguing vociferously when opposed. He resented the fact that he was not given a higher rating and approached high ranking officers to complain about his "unfair" treatment. He was heartily disliked by all the other men, whom he disdained as intellectually beneath him. Overseas he began to think he was being harassed and persecuted by everyone. He upset the efficiency of the office in which he worked and was overbearing toward the men of lower ratings. He asked for a reassignment and complained loudly when he didn't get it. He said he was never given a square deal. Finally, after a violent quarrel, he lodged a formal charge against the sergeant who was his immediate superior. It was then discovered that he had written letters to his senator, congressman and the President.

On examination, it was clear that this man had the type of abnormal personality known as "paranoid." He was obviously unsuited for military duty. He was transferred to a psychiatric hospital for further study.

Case 9—A 34-year-old PFC had been broken in rank several times in his 39 months in the Marine Corps because of drunkenness. After repeated appearances at sick bay for the relief of symptoms following alcoholic bouts, he was referred for psychiatric examination. His chronic alcoholism was seen to be a manifestation of his underlying con-

stitutional psychopathic inferiority and he was recommended for medical survey.

Case 10—A 28-year-old private was sent to the psychiatrist by his commanding officer because of a report that he had made improper advances toward another man. The patient had been an artist in civilian life and was definitely feminine in appearance and manner. After prolonged questioning he admitted that he was homosexual in his inclinations, but insisted he had controlled himself since entering the service. In recent weeks the close propinquity of the other men had become increasingly disturbing to him and his usually flawless secretarial work was beginning to deteriorate. He was hospitalized for medical survey.

Homosexuality is a hazard in military life not only because of its abnormality and demoralizing effect upon other men. Homosexuals are often sought out by enemy agents and then blackmailed into subversive activity. In spite of their frequently excellent and meticulous work, they do not belong in the service.

Much of this information may seem complex and difficult to the non-medical man. It is not expected that every officer will attempt to learn and remember all phases of it. But some parts of it will stick in one's mind, perhaps to turn up in the months or years to come just when it is needed very badly. In any case, here it is, where it can always be referred to when matters of nervous and mental disease are in question.

(The last in this series of three articles will appear in the January GAZETTE.)

Britain's "Swimming Tanks"

DETAILS of a secret weapon which saved the lives of at least 10,000 Allied soldiers on D-day for Normandy were made known when the curtain was lifted on how the British Army produced 40-ton sea-going tanks that swam ashore and rampaged among German pillboxes, knocking out enemy guns before they could fire on the Anglo-American assault waves.

This tank, known among the Allied armies only by the code letters DD, which stood for Duplex Drive, had to remain a top secret till the end of the war with Japan. It saved lives in many famous battles, by providing immediate and adequate tank support to the assault troops on the Normandy beachhead, the crossing of the Scheldt Estuary and in the crossing of the Rhine and the Elbe.

Tanks brought in close to shore on landing craft make large and vulnerable targets. But swimming tanks put into the water several miles off shore out of range of the coast anti-tank defenses, riding so deeply in the sea that they resembled infantry assault boats, present small and scattered targets.

The tanks are made to float by waterproofing

the hull and by fitting a canvas screen, capable of being raised and lowered.

When the tank reaches sufficiently shallow water for it to be borne on its own tracks, the screen can either be deflated partially at the front so that the turret gun can fire, leaving the screen raised at the rear to give some protection from the waves; or the screen can be dropped the whole way round.

For seaborne assaults, the DD tanks can be launched from landing craft, can swim through fairly rough seas, and can go into action immediately they reach shallow water in which the screens can be lowered. In still water, a speed of four or five knots can be achieved. Various auxiliary pieces of equipment are necessary for use with these tanks: special periscopes and compasses have to be provided for navigation at sea; and for their own protection, crew members wear a modified form of the well-known Davis escape apparatus. In order to ease the supply position, DD tanks can tow floating sledges loaded with ammunition and stores, and can drag them some distance ashore—*British Information Service.*

Instructors' Orientation

By 1stLt Lewis Meyers

THE lieutenant colonel finished speaking, picked up his notes, and started to leave the platform. Among the audience a second lieutenant got to his feet.

"In my opinion," he said, "the colonel's main fault was in his eye-contact. He looked over our heads most of the time. Otherwise it was an excellent presentation."

No repercussions followed this criticism of a silver leaf by a gold bar, for it happened in a Quantico classroom where such situations occur almost daily. When the Instructors' Orientation Course is in session, all hands present are students and rank is just a form of address in the classroom.

As stated in its title, the Instructors' Orientation Course exists to get instructors "squared away." At first glance two weeks for such a course seem superfluous. Instructors in the Marine Corps Schools are combat veterans who learned their subjects from battles as well as books. Most of them spent a high percentage of their time in the field teaching troops. With all that field and teaching experience—just how much do these officers need to learn?

The answer, of course, is that they are being taught the one thing few of them ever had a chance to learn: how to teach. For this two-week intensive schedule, teaching knowledge is divided into two main subjects: public speaking and principles and psychology of instruction.

During the war the Marine Corps Schools sent questionnaires to the divisions in the field, seeking an evaluation of Quantico graduates. There was one common complaint—that officers in the field were not equipped to get their knowledge across to the men under instruction. This was only natural, since virtually all marine officers had spent their service careers learning their jobs and various related subjects. But only the few who had civilian training as educators had the background for teaching. Nearly all officers *were* teaching and many were doing a good job through aptitude and learning the hard way (for them and their students).

It is clear, then, that a need existed for training in the mechanics of instruction. But public speaking lessons may seem unnecessary, since officers speak in public under such a variety of conditions that they would be expected to acquire some skill just from experience. Ample proof that such instruction is needed can be found in any IOC class.

Reports from the field indicated that many officers were not equipped to get their knowledge across to the men under them. This special school at Quantico helped to train them in the mechanics of instruction.

The following pronounced but still typical case occurred in one of the earlier Orientation classes.

The burly lieutenant was trying to make his first speech in the class, a three-minute extemporaneous discussion. The speaker seemed to have few ideas on his topic and even those few were eluding his frozen mind. All types of embarrassment are displayed in these first speeches, but witnesses still recall the lieutenant as the all-time high. Even his critical colleagues in the class were embarrassed as they watched and listened to the occasional, disjointed phrases which interrupted his lengthy periods of silence. At last the agonized three minutes had ticked away and the lieutenant stumbled to his seat, a broken man. Another student was called upon to criticize the performance and began his remarks with the striking understatement that "I think we can say that the lieutenant was somewhat nervous on the platform."

The instructor interrupted from the rear of the room. "How about that, lieutenant?" he asked. "Were you really nervous?"

The recent speaker sprang to his feet and turned to face the instructor and the class. "I almost died," he said fervently. Then, while the class roared with laughter, he launched into a passionate account of how he had handled troops and been in combat but never, never had he felt anything like the paralyzing fright that gripped him on the platform. After a few minutes of this inspired oration, he suddenly stopped, realizing he was making a speech. He continued to make them the rest of the course.

THE Instructors' Orientation Course was organized on 4 December 1944 by a Marine Corps School order. Maj Arthur Sherwood, from the Command and Staff School instructional staff, was officer in charge, assisted by Capt Gordon Craig and 1stLt David Bell. These officers developed the two-week curriculum. For this purpose Capt Craig, a Rhodes scholar and faculty member at Princeton University, contributed an extensive educational background to supplement the service teaching experience of Maj Sherwood and Lt Bell. As a result, the subjects on the IOC schedule apply educational knowledge to marine teaching situations.

In February 1945 a graduate of the 3d IOC, Maj J. R. Chaisson, took charge of the course and was assisted by Capt. D. L. Faw and 2dLt W. P. Muller.

With an average attendance of 25 to 30 officers per class, approximately 350 graduates have come from the 13 classes so far conducted. The students

have ranged in rank from warrant officers to lieutenant colonels, with one Navy captain. Nine Women's Reserve officers have been students, as have three members of the Royal Netherlands Marine Corps. About two-thirds of all graduates were assigned instructional duties at Quantico or returned to such duties, so gradually the entire MCS staff of instructors is receiving this training.

The schedule has changed little since the first classes. The fundamentals of instruction and its psychology are presented during the first week, followed by an examination. Also included are trips to various areas of the post, to familiarize the students with all the facilities available to the Marine Corps Schools. Other trips are made to observe classes under instruction.

STARTING midway in the first week and taking up most of the remaining part of the schedule are the speeches. Instruction in principles of public speaking goes on concurrently with student performance. Each member of the class gives four speeches during the course, ranging from three to 30 minutes. The first is the extemporaneous one, for which the student has his choice of a list of topics and about three minutes to select a subject and prepare his talk. This is followed by the six-minute "gadget" talk, wherein some object is displayed, demonstrated and explained by the speaker. Subjects here have ranged from a coke bottle or a WR lipstick to field stripping the Colt .45 caliber pistol.

The eight-minute speech is next, a discussion of a military subject where the student must follow an outline he has submitted showing the time allotted to the various points. The culmination of the course is the 30-minute lecture in which the student applies all he has learned in delivering a unit

of instruction, including training aids. Every speech is criticized by staff and students.

The improvement apparent in all speakers in those four speeches justifies the course. Even competent instructors of considerable experience do not enjoy the first occasion of standing on the IOC platform facing a roomful of eager critics. As an added attraction, the first three speeches a student makes are recorded for his benefit. This means there is a microphone around the speaker's neck and a cord dangling behind him and that he starts speaking when a little light on the lectern blinks twice. By the end of the course these things are taken in stride.

Through hearing his own voice on three different recorded occasions, the best speaker may learn ways to improve his delivery. The criticism from staff and class makes errors very apparent—and also calls attention to any improvement.

The constant critical listening done by the student heightens their standards of performance considerably. It helps them to be critical of their own performance; it also makes them critical of all speaking and instructing. This means an improvement in instruction generally, for in future duty assignment these officers will have some supervision of junior instructors. The critical principles acquired in IOC will enable the platoon leader to have efficient instruction in his unit, both in his own teaching and in that of his noncommissioned officers. Similar constructive criticism can function in all echelons.

Thus an additional factor has been added to the high standard of efficiency expected of a marine officer. He can be more effective in speaking and teaching situations which will be increasingly frequent in the days ahead.

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Troop Officers' Battalion Newly-commissioned

officers can be taught practical application of the knowledge they gain from training to help qualify them for their tasks as instructors and leaders. **By Maj Victor H. Streit**

THE aim of wartime military training is the maximum mental and physical preparation of the potential fighting man so that he may destroy the enemy quickly and efficiently. In peacetime, this complete preparation is equally necessary to guarantee readiness of those who must do the fighting should war suddenly occur.

Before victory, the Marine Corps, like the other branches of the service, endeavored to strike a balance between speed and thoroughness in preparing officers and men for combat. A case in point was the Troop Officers' Battalion, and experience gained in this phase of training may prove valuable to future needs of the Corps. While assignment of a student-officer to this battalion necessarily postponed his going overseas for a matter of six weeks, this period represented a contribution to his background for battle which far outweighed any possible advantage resulting from sending a newly-commissioned officer directly overseas upon completion of his basic training. In the long run, the Troop Officers' Battalion was, in fact, a time-saver. It reduced to a minimum that period of trial and error and adjustment which confronts every second lieutenant as he assumes for the first time the responsibilities of a troop leader.

The Troop Officers' Battalion was a comparatively new organization, having been activated on 1 July of this year. But the school, which forms the nucleus of the battalion, had its inception in February. At that time it bore the title, Officers' Application Course. Regardless of organizational changes, however, the purpose of the school remained unaltered. It was this: To teach newly-commissioned officers practical application of the knowledge they gained from training and from combat experience, the better to qualify them for their threefold role as officers, instructors and leaders. This was achieved by affording the student-officer maximum opportunity to exercise his initiative in devising and working out classroom and field assignments, and in criticizing his classmates objectively. Teaching experience has shown that the average person can retain about 10 per cent of what he hears, 50 per cent of what he sees, and 90 per cent of what he does. It was with this in mind that the Troop Officers' Battalion adopted as its applied motto: *Learn By Doing*.

In the war months prior to the activation of the school, most junior marine officers were sent overseas immediately upon completion of their basic training at Quantico. They went with a comprehensive knowledge of basic weapons, customs and courtesies, platoon tactics, map reading—all the subjects which sooner or later would confront the

prospective troop leader. They were told they would have to know these subjects as requisites in the subsequent training of their troops. But something was lacking. That was knowledge of the instructional techniques which guarantee effective training. The Troop Officers' Battalion was designed to fill this need. Throughout the six-week course, emphasis was placed on *principles* of instruction. Subject matter is of secondary importance. The primary concern of the student-officer was not *what* to teach, but *how* to teach.

The so-called permanent officer personnel of the battalion were organized into two separate but interdependent staffs; one administrative, the other supervisory. The former consisted of the commanding officer, the executive officer, the plans and training officer, the adjutant and the police and property officer.

The supervisory staff was composed of 36 officers, organized into four groups of nine each. The groups were divided into two committees of four supervisors each, two captains and two lieutenants. A major was senior supervisor of each group.

The reason for two committees per group was that the school operated on a two-block system, a new class beginning the course every month. This enabled one committee from each group to handle a single class. A typical breakdown might allot 45 students out of a class of 180 to each of Committees I, II, III and IV, leaving the remaining committees free to supervise the next class. The advantage of such an arrangement was manifest. It permitted better acquaintance and fuller understanding between supervisors and students. During the field training phase in the last four weeks, students were further subdivided within the committees so that a supervisor might have as few as 20 students. This made for more individualized supervision and for more presentations per student.

THE curriculum allowed the maximum exercise of initiative by the student-officer, and instruction by the school staff was kept to a minimum. During the first week, a period of indoctrination by the supervisors, the student-officer was taught qualities of the instructor, methods of instruction, mechanisms of instruction, training aids, training management and public speaking. Equipped with these tools, he was prepared to test his proficiency in their use. This period of testing occupied the remainder of the course, with a wide selection of subject matter serving as convenient material to which to apply the tools. For the sake of progression, the applicatory phase of the course began in the classroom with

brief oral presentations on basic subjects. By the end of the second week, subjects were of a less elementary nature. Presentation periods were lengthened accordingly. Weapons were a common topic for lecture or conference at this time.

The third week found the student-officer taking to the field for the first time. Here he was able to employ the Demonstration, Coach and Pupil, and the Group Performance methods of instruction, with individual marine, fire-team, squad, and platoon exercises serving respectively in each of the last four weeks as media for their employment. He had the opportunity to test the suitability of a certain phase of fire-team training, for example, to a given instructional method. He had an opportunity to familiarize himself with the obstacles involved in the conduct of field training and how to overcome them.

IN ORDER to round out the curriculum, and in accordance with its stated purpose, a course in leadership was instituted last May. Numerous requests for such a course by students in the early weeks of the school were partially responsible. The course embodied a definition of the qualities of leadership, followed by character sketches and case histories demonstrating good or bad leadership. As in the case of teaching techniques, it involved introductory lectures by the supervisors before oral presentations by the student-officers were made. This course, it is believed, represented a substantial contribution to the young lieutenants' appreciation of the attributes which make for efficient troop leading.

To supplement the training of these future troop leaders, the Troop Officers' Battalion offered an extensive assortment of training aids ranging from simple charts to 37mm anti-tank guns. If the student elected to choose the subject "Graves Registration" for one of his lectures, he had at his disposal a grave-marker fully inscribed with the appropriate data. Likewise, a lecture or conference on the Nambu machine gun enabled the student to demonstrate his points by showing the class the actual weapon.

The critique was accentuated throughout the six-week period and complemented student application as a means to learning. Each presentation by the student, whether a ten-minute lecture or a one-hour field exercise on a particular phase of platoon tactics, was followed by a careful critique by both the class and the supervisor.

More than half of the total training hours in the second week were devoted to the primary and special weapons of the infantry battalion. This was the first week in which student application actually came into its own. Late in the second week, the student reconnoitered for field exercises incorporating technical training in technique of control.

Before conducting field demonstrations himself, the student-officer witnessed a model demonstration conducted by the staff. This served as an introduc-

tion to the first week of field training, and familiarized the student with the steps essential to a successful demonstration. Technical training in the technique of control came during the third week.

In the last four weeks of the course, the progressive nature of the training became more apparent as the prospective troop leaders carried out field exercises emphasizing successfully the tactical training of the individual marine, the fire-team, the squad, and the platoon. The technique of rifle fire, including combat firing practice, was practiced as a concurrent subject during this phase of training.

It was during this final phase of training, too, that night problems were prepared and conducted. Each student carried out a problem involving one or more of the following: control and security, outposts, signs and countersigns, listening posts, combat outposts, recognition of sounds, compass march, reconnaissance patrols, combat patrols, night raids, technique of control, and lastly, the rifle platoon in the occupation, organization, and conduct of the defense.

The officer who joined the Troop Officers' Battalion came from one of three sources: (1) officer graduates of the Platoon Commanders' School, Marine Corps Schools, Quantico; (2) officers commissioned by field appointments; (3) miscellaneous. Of these three, the first source figured most prominently. Field appointment officers might, in rare cases, have been assigned to the battalion; the usual procedure was to send them instead to the Troop Non-Commissioned Officers' Battalion, an organization whose aim is generally similar to that of the Troop Officers' Battalion. Officers from miscellaneous sources were too few for consideration.

The starting dates of each class were coordinated with the arrival at the Marine Training Command of graduates of the Platoon Commanders' School. An average of 175 of these graduates were assigned to the Officer Troop Leaders' Course to make up a new class each month. Most of the graduates of the Officer Troop Leaders' School were transferred to the Infantry Training Regiment pending further transfer to outgoing drafts. A small group, about three per cent of each class, was assigned to Combat Intelligence School. All other officers were available for assignment as directed by the Commandant of the Marine Corps or by the Commanding General, Marine Training Command, Camp Lejeune.

Although at the time of writing no reports from combat units have been received as to the caliber or performance of duty of officer graduates of the school, the favorable comments of unit staff officers of the Infantry Training Regiment substantiated the conviction of both the battalion staff and the student-officers themselves that the graduates were infinitely better prepared to assume the serious responsibility of troop leaders.

The Troop Officers' Battalion proved the theory that the motto, *Learn By Doing*, properly applied, can be more than a high-sounding phrase.

Autoflight Jet Propulsion Unit

A REVOLUTIONARY American version of the German V-1 buzz bomb engine, so efficient it can fly through the air without wings, is one of the latest developments in the field of jet propulsion. Today suitable only for super-sonic speed airplanes, tomorrow scientists may apply it to all types of marine and land transportation.

Information released by the Army on a small test model of 2 lb thrust, which is but four one-thousandths of the size of the V-1 engine in capacity, states that it works perfectly in every respect and, pound for pound, is superior in many other ways to the German propulsion unit. The tiny wind tunnel model is but two feet long and approximately two inches in diameter, is made of aluminum alloy and stainless steel and weighs only five ounces. With a small, lightweight fuel tank, this engine, launched from an inclined plane, would fly through the air without the necessity of wings.

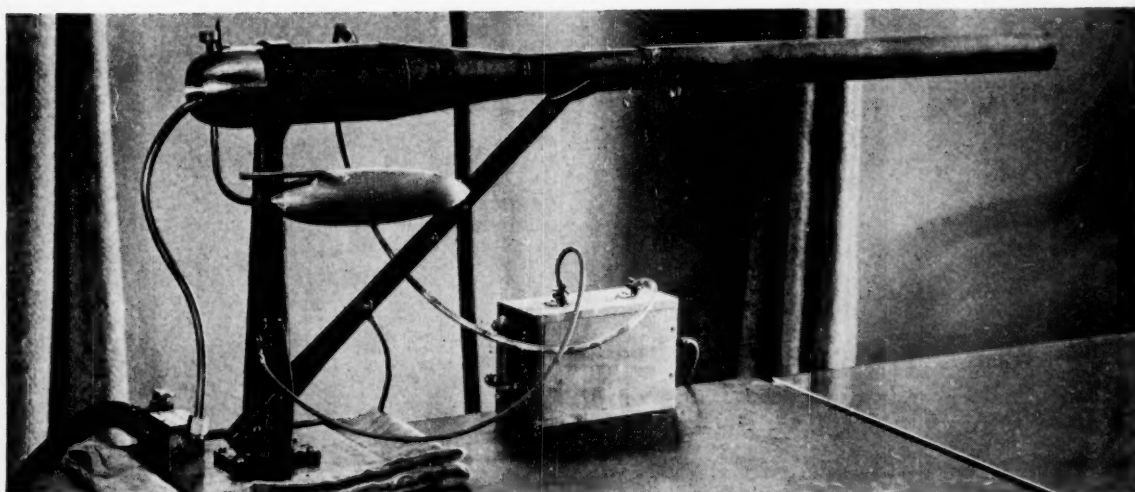
The engine is fully controllable, burns gasoline or kerosene, and, after once being started by means of a small spark plug, will run until fuel is exhausted without ignition being necessary. The engineers who developed it claim considerably

greater efficiency for the Klose model, known as the Autoflight jet propulsion engine, over its German prototype by reason of more thrust, less weight and smaller size. The American model also fires many times faster than the German engine, thus developing more power. The wind tunnel model, for instance, when operating at full throttle, fires several hundred explosions per second.

One of the problems yet to be solved in jet engine construction, according to the engineers, consists of sound control, since attempts to muffle jet engines have resulted in great loss of efficiency. Engineers who work in wind tunnels and testing laboratories with jet engines wear earplugs, otherwise they are subject to headaches and ringing ears for several days.

C. M. Giannini & Co., Inc., worked in conjunction with the U. S. Army Air Forces at Wright Field, Dayton, O., in developing the new engine. Two Giannini aeronautical engineers, A. J. Klose and W. B. Goodman, made a careful analysis of the first German V-1 buzz bomb projectiles received in this country, then set out to produce an American propulsion unit of superior characteristics.

Potential use of this new jet engine is still a subject under government restriction. Complete tests have been run on many sizes and models. Military and commercial development is waiting further decision by the Army Air Forces.



The Giannini impulse-jet propulsion unit ready for operation. Streamlined fuel tank may be noted just below the engine. Above, wind tunnel model engine in cross section.

Marines Off Carriers

(Continued from page 10)

unlimited. The imperial city of Tokyo spread out beneath them. One squadron commander described it as a "thrilling, beautiful sight."

Atsugi and Tateyama fields got a working over from the fighter bombers with another flight following in on strafing runs. The bombers laid all their eggs on the Atsugi strip, which was described as being cluttered with twin-engine planes. There was no confirmed damage analysis of this particular strike, but it must have been considerable. All flights this second day reported the airfields jammed with planes probably massed by the Japs for a haymaker at the fleet around Iwo Jima. The Japs never got to throw that punch.

One marine flight of eight planes tangled with 20 Japs but gun jams at the critical moment "reduced" the kills to two, with another three damaged. Following this, the flight went after ground targets with Maj Alward, a squadron commander, hitting a locomotive from 20 feet altitude, low enough to get mud on his windshield as it blew up.

Another group off the *Bunker Hill* was a principal in one of the weirdest air battles of the war. Assigned an escort mission, it mixed with a group of Japs at 25,000 feet and for 20 minutes made pass after pass at the enemy, unable to fire a shot because of frozen guns. Finally, one marine enticed a Jap down to lower altitude and shot him down—the sole kill of the fight. The Nips broke off the engagement and the marines continued down to deck level to strafe their target, then went home. A hurried adaptation of a heater for the wing guns insured against further "dry" scraps at high altitude.

Marine pilots also got missions against the fields at Haramachida and Shimomizo. There was an escort job to do for a strike on the strips at Toyohashi and Hamamatsu. Later in the day, Maj Mobley and a dozen others went out on a special attack against a light cruiser reported in Tokyo Bay. In a bad squall Mobley became separated from the rest. Unable to locate them again and not finding the cruiser, the squadron leader made a one-man attack on another warship which he located and scored rocket hits. The remainder of the flight found the CL and damaged it.

On the next visit to Tokyo, an air fight in which Alward's flight became involved and which cost the squadron commander and one of his pilots their lives added a negative chapter to the discussion of the efficacy of the Luftberry circle as a defensive maneuver. Returning from an attack on the warehouses and oil storage areas on Nojima Zaki, the flight spotted an 8,000-ton cargo transport. During the attack on the ship the flight was jumped by 15 Zekes. It was a bad spot to be in. The Nips had

a substantial altitude advantage, plus the element of surprise in their favor. As a last resort the marines joined up in a Luftberry circle. In short order the Zekes, with a series of flat side passes, had knocked down Alward and another pilot. The maneuver was abandoned, the marines fought their way out on a section basis and succeeded in destroying a George.

In some of the fighter sweeps staged to knock out the kamikaze planes while still on the ground, the marines ran afoul of the Jap faculty for good camouflage, and their effectiveness suffered. One in particular is worth mention. In mid-March a marine flight was assigned a sweep against three air strips on Kyushu. After the customary search for airborne opposition, they dropped to near deck level to strafe. They made two passes over the first strip. There were no planes visible on the ground. One pass on each of the others—still with negative results. The day following, photographs showed 27 cleverly camouflaged planes revetted around these three strips.

Nor did every strike have a happy ending. Witness the 19 March attack on Kure. As a matter of record, that day can be put down as a bad one for the fleet. Even as the strike planes were winging on their way to hit the dumps and installations around the base at Kure, Jap kamikazes burst out of nowhere and severely damaged the *Franklin*. Not a good beginning.

THEN, as the forward elements of the attack planes came into sight range of the harbor at Kure, the target coordinator picked up his mike and reported a ship. From that point on, as one squadron commander describes it, "it was like a stage show." The target coordinator mentioned seeing several more ships and then, excitedly, he transmitted, "Jesus Christ—the whole Jap fleet is here!"

The assigned targets of oil stores and ammunition dumps were forgotten. Sixteen marine fighters bearing rockets, from VMF 451, led the bombers in. They picked a CV and scored hits. The bombers pressed after. The air over the harbor was alive with action. Attacking planes, anti-aircraft bursts and over the latter a flock of aggressive Zekes. The attacks were well executed and determined but luck was against the bombers—luck and a terrific concentration of anti-aircraft fire. Near misses were frequent and probably damaging, but there were no direct hits save those scored by VMF 451 on the CV.

A pilot said that on leaving the target he looked over his shoulder and could see a solid mass of smoke from AA bursts that stretched from 3,000 to 13,000 feet. The same flier noted several splashes as injured planes ditched near the rescue sub.

Not recorded is the effect on the cadets attending the Jap naval academy. The flight was held practically on their front doorstep. They probably got more from this demonstration of combat than could

be learned from a full semester of study. It's fairly certain their morale wasn't helped.

The day closed with some of the marines flying cover on the *Franklin* as she limped to safer waters, while others paid a return call to Kyushu strips which got them 20 grounded planes.

VMF 112, off the *Bennington*, figured in two actions which are regarded as perfectly executed fights against enemy aircraft. In both instances the 112 divisions were jumped by the Japs and through skill and aggressiveness quickly turned the tables of advantage on the attackers. On the first occasion, 16 VMF planes led by Maj Hansen, were cruising at 19,000 feet en route to the strips of Konoya for a sweep. The formation was stacked down in divisions of four. Over East Konoya they were jumped by 19 or 20 Zekes. Hansen flashed the word to his squadron and led his division in a violent turn flush into the tail of the Nip formation. In six seconds five of the Zekes were aflame. Chutes blossomed all over the sky as the Nips bailed out. Unimpressed by this catastrophic beginning, the Zekes kept coming. The marines maintained their divisions as fighting teams of four and the slaughter continued. When the Japs broke off the dog fight, the marine pilots had nine confirmed kills to their credit and six Nips severely damaged. That done, the squadron went in and hit the strip. Back on the carrier, a careful examination revealed not so much as a hole in any of the Corsairs.

In the second scrap, Maj Hansen and his flight staged another movie thriller—this time over Amami O Shima. Assigned the interceptor CAP, they had just come on station when they spotted a half dozen Kates (most frequent suicide type) escorted by 15 Jacks and Zekes. The marines were stacked at 9,000, 11,000 and 12,000 feet and the Nips were above. A full power climb brought the Corsairs level at time of contact. Hansen's division hit the dive bombers and got four or five on the first pass. The other two divisions tangled with the fighters. With the exception of the Jacks, the Nips were not too aggressive. The Kates that had escaped blasting in the first pass high-tailed it for the horizon with several of the marines hot on their tail. After the first contact, the action changed to a melee. One of the fliers described it as a "rat race from the deck to the ceiling." Again the marines fought in divisions, with four planes as a mutually supporting unit. This time their tactics paid off with an even better score. Twelve marines splashed 20 Japs without even serious damage to a Corsair or a pilot.

Numerous other strikes are of interest. On 7 April, when the Navy had its big day against the anchored Jap fleet and sank the battleship *Yamato*, the cruiser *Agano* and three destroyers, the only marine pilot flying on the attack hit the *Agano* square on the forward turret. In the turkey shoot against the desperate kamikaze attacks on the fleet

during the Okinawa battle, the marines racked up their share of kills. Along with navy fighters, they shared the barrier and interceptor patrols that were thrown up to the north. During these fights, pilots ran across plane types they'd never seen in their recognition drills, obsolete fighter and bomber craft, biplane trainers, the scrapings of the Jap aircraft barrel. They came in droves of 160 to 200 at a time. Evasive action, save for slight turns, was rare. The sole difficulty was spotting them and getting to them before they passed the fleet screen.

One marine blasted his guns into a kamikaze, and the plane disintegrated before his eyes. Something flapped across his windshield, temporarily blocking his vision, and then tore loose. It was his impression that it might have been a ceremonial robe worn by the Jap pilot. On returning to the carrier he discovered a length of silken cord caught on his aerial, probably the tie that bound the robe around the pilot's waist.

TACTICALLY, the tour demonstrated the soundness of the formations and maneuvers which were being given in combat training. The ineffectiveness of the Luftberry pointed up by the experience undergone by Alward's flight is not entirely a surprise to students of defensive maneuvers—granting the fact that in this case the disadvantage under which the marines were fighting was such that there wasn't much of anything that could have helped.

The tendency was to relax, in some degree, the precision of attack maneuver patterns. Diving columns were loosened up somewhat to give the anti-aircraft more than one flight path on which to train. Strafing passes were made line abreast for the same reason.

Equipment-wise, gun heaters are an essential for high altitude combat. On Okinawa close support missions, the new ARC-1 radio was a great improvement over previous equipment.

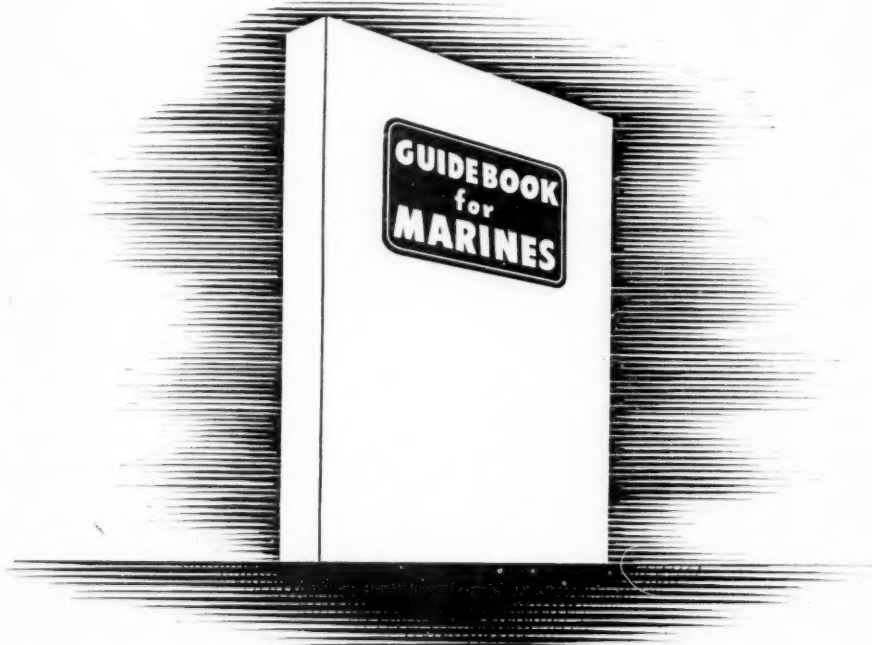
Contrary to earlier opinion, the F4U proved its worth as a carrier type plane. In experienced hands it was satisfactory on and off the deck, and the U's speed and climb in air combat provided the fleet air arm with a killing edge over the best land-based fighters the Japs could launch.

The special nature of carrier operations was emphasized. Had time permitted a more thorough introduction to the tricks of the carrier trade before the marines went aboard, operational accidents would probably have been reduced. These losses were not excessive at any stage, but their incidence among the marines in their first weeks aboard was usually well above that for experienced naval squadrons for the same work.

Adding new laurels to the reputation of the marine air arm, the carrier program is further proof, if any is needed, that the "can do" spirit of the Marine Corps in World War II resulted in a fighting organization with a triphibious versatility unmatched in the history of war.

END

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Communications For Small Units

By 1stLt Robert W. Fisher

OKINAWA'S open terrain, variable climate and relatively great distances constituted a real challenge to communication equipment and personnel. This was particularly true in battalions and companies called upon to cover frontages and patrol areas far larger than in any previous marine operation in the Pacific. The following observations, gathered during the 82-day campaign, are concerned primarily with small unit communications, with special emphasis being given to the two principal signal agencies, radio and wire.

Throughout the Okinawa campaign, the SCR 300 once again proved to be an ideal radio for intra-battalion communication. Its range is appreciably greater in open terrain than it was under jungle conditions, and frequently these sets operated satisfactorily over distances up to four miles. Large land masses still constitute a major obstacle, but often this handicap can be eliminated, or reception at least improved, by shifting the position of one or more sets. No large metallic deposits were encountered on Okinawa, thus improving chances for favorable operation of the sets. Staff officers and company commanders made constant personal use of their SCR 300s. In view of this increasing tendency to use the set as a radio-telephone among officers, the schooling of such officers in simple voice procedure is virtually imperative.

Battery supply is a difficult problem when vehicles cannot keep pace with assaulting elements; replacement batteries should be given priority comparable to that accorded ammunition, food and water. On several occasions during the campaign, air-drops were utilized to deliver batteries.

The simplicity of operation of the SCR 300 proved an important feature during the long operation, as casualties among radio operators were heavy. On several occasions men previously untrained as operators replaced casualties with a minimum of disruption to radio traffic.

Among other radios used by rifle battalions on Okinawa, the standard Navy TBX again proved to be most reliable and was used almost continuously between battalions and regiments. Since it is affected little by adverse weather, this durable radio frequently operated when others were unserviceable. The SCR 610, a set not used previously by rifle battalions, was effective at times but had numerous failures due to rough handling and bad weather. The jeep-mounted TSC was reliable at

all times but frequently could not be brought close enough to the CP to be used. Land mines constituted a serious obstacle to use of the TCS in forward areas, and its relatively powerful output gives the enemy a chance to use direction-finding equipment. The diminutive SCR 536, better known as the Spam Can, was used extensively by companies and platoons but did not prove durable enough.

Despite the effective use of radio, wire remains the most effective means of communication for companies and battalions. The evolution of the battalion landing team, with its numerous supporting and attached units, necessitates the use of many more telephones than were required formerly. In addition to the standard telephone installations for the commanding officer, staff members and companies, the battalion communication officer must provide telephone service for such important landing team components as the liaison parties of artillery, naval gunfire, air support, chemical mortars, tanks and antitank guns. Consequently, the six-drop switchboard BD 71, formerly considered adequate for battalion needs, is no longer practical. A minimum of 12 drops was required throughout the Okinawa campaign, and frequently additional service was provided by means of party lines.

Because of distances involved and difficult terrain encountered, lightweight assault wire W-130 was utilized extensively by small units during the attack. In this connection, the development of new composition and braid coverings for this wire contributed materially to its efficiency. Standard field wire W-110B was used for regimental to battalion trunk lines and whenever vehicles were available for wire-laying. Okinawa's fairly extensive road net was used wherever possible. Assault wire was found to be very satisfactory except in areas where tracked vehicles were employed, in which case the lines were overheaded or buried when time permitted. The bulk of line trouble, however, was caused by enemy mortar and artillery fire.

Company to battalion telephone lines, often considered practical only at night or in a defensive position, were maintained on a 24-hour basis with relatively few interruptions. Trained communication personnel from battalion headquarters were attached to assault companies with the sole mission of maintaining these lines. Each company was provided with approximately one mile of assault wire prior to moving out in an attack, and with few exceptions this allowance proved sufficient.

The extensive use of telephone facilities by companies offered the additional advantage of conserving radio batteries and equipment for emergency use. Because of large frontages frequently covered by night defensive positions, companies on many occasions utilized assault wire for intra-company telephone nets. These platoon-to-platoon lines employed standard sound-powered telephones and were extremely effective as a warning system against enemy infiltration attempts.

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